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Francis J. Gerty

PRESIDENTIAL ADDRESS

THE PHYSICIAN AND PSYCHOTHERAPY¹

FRANCIS J. GERTY, M.D.

God permitting and by your election I have served as your President during the past year. Of the honor of the election I am sharply aware and highly proud. During the year the bearing of the not inconsiderable weight of the burdens that go with serving in your highest office has yielded me great satisfaction. It is the satisfaction of knowing that the majority of you had the faith, the hope or the charity to believe I would bear such burdens at least passably well. Today you accord me a most special privilege,—that of saying publicly what I will on any matters related to our common work under your great trust that what I may say, even though an expression of my private opinions, will do our Association no discredit. I am humbly grateful for the privilege you grant me and the trust you repose in me.

In its content an address made at the ending of a term of office seems to divide quite naturally into two parts. One part concerns comments and projections of thought upon the events and developments experienced during the period of service.

The other and, to me, more pressing part of my privileged duty today, concerns a reexamination and discussion of some most important ways in which human relationships are involved in connection with the enduring principles upon which the practice of medicine was founded. The particular principles I will hold in view are these :—first, the physician should have a sufficient comprehension of what is required if he would treat the patient adequately as well as the diagnosable ills from which the patient may suffer; second, that while practically it may be necessary, often, to depend upon empirical remedies and also upon intuitive perception and procedure

in the relation of the physician to the patient, there should never develop a blind dependence upon these means, but rather the constant endeavor should be to subject empirical and intuitive means of treatment to as close scientific scrutiny as possible to find out the secrets of their operation. The condition of our knowledge establishes empiricism in the practice of our art. The requirement of science is that the condition of our knowledge should be improved to the end that in the practice of our art we will progressively need to ask less and less of empiricism and intuition. After I finish my review and comment upon our organizational happenings of the past year, my discussion of this subject will proceed on the theme of the physician and psychotherapy.

Some events worthy of notice now have happened during the past year. The outstanding ones are the first appearance of vice-presidents in the roster of our officers in the persons of Doctors William Terhune and David Wilson; the retirement of Doctor Daniel Blain as Medical Director and the assumption of that office by Doctor Mathew Ross; and finally, the occupation of the new home of the Association, the first which it has owned in the 115 years of its history. I have called upon both vice-presidents when I could for a readily proffered aid. Unfortunately, their duties have been poorly defined so far. Very particular service to the association amply justified their election to office. Doctor Terhune put together the foundation for our new home,—that is, he conducted the campaign for the dollar foundation, without which there would have been no home. Doctor Wilson has done much to build the foundation for a new part of our organization,—the Assembly of the District Branches, which more and more is shaping the ends of our work. I told Doctor Blain

¹ Presidential Address delivered at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., April 27-May 1, 1959.

that I wished he had picked some other time than my term of office to resign, so much do I, as I am sure do all of you, value the extraordinary worth of what our first medical director has done to develop American psychiatry through his position in The American Psychiatric Association. The search for a new medical director was a long one which Doctor Malamud and Doctor Branch pursued with assiduity and to good purpose for it has brought us Doctor Mathew Ross, who has glided into the stream of our activity smoothly and with firm stroke. As to the new home, I need say little except that you should visit it and discover that large though it may have seemed at first, already its busy staff finds no excess of room.

Our increasing membership is a reflection of a general public need—it is not an accident—nor is it purely an indication of our activities in improving treatment services in our specialty. So far we do not succeed in meeting the need fully. No specialty of medicine is or should be more sensitive in responding to this need,—a need arising in individuals and in the relationships of individuals to one another,—than ours.

The membership increase brings special organizational problems. We must be careful that organization does not become our most important business. Our chief attention must always be given to the improvement in our ability to do our primary work through every means that we can use to promote the increase of knowledge and to make that increase show as a value in application. Scientific discovery and education of others in the mysteries of our art and science are the things for which the chief prizes of recognition should be reserved. In small scientific organizations, election to office is a principal form of recognition. When the organization becomes large, the proneness to use the democratic process for all purposes often interposes a difficulty in the way of according recognition for scientific contribution through election to office. I would suggest that the Presidency might well be given sometimes, and not too infrequently, as a recognition to our leaders in the fields of thought and scientific exploration. Even this will not fully serve the purposes of

according recognition that should be given for research, for teaching, and for directing organization specifically to such purposes. Some of our members have deserved such recognition while they were living. The processes for granting it are still not well established. To some our recognition has come only posthumously and unofficially. One of our past presidents, Doctor Brace-land, has suggested that we officially establish some means of honoring those who furnish the chief sustenance for our growth. I join him in expressing the hope that this will be done. Organization for organization's sake will never suit the real ends and aims of medicine.

I have said that the growth of our association is an index of a public need. It is a need which is increasing. I shall not picture it in detail. Its bulky outlines must already loom before you. The country is moving into a period of great population growth. It is estimated that the present 179 million people in the United States will be 228 million by 1975, a little more than 15 years hence. Medical schools are graduating a few over 6,800 physicians a year currently (the figure for 1955-56 was 6,802). The projected plans do not indicate a very remarkable increase in this number since it is estimated that 8,000 will be graduated in 1970-71. For psychiatric treatment this deficiency of service is reflected very sadly in all states. The facts are so well known that I do not intend to restate them. I believe that the assumption of deficiency of psychiatric service is well enough justified that I may now turn to my theme of the physician and psychotherapy.

From its very beginning, even before history made the record, the practitioners of medicine have had to depend heavily on their understanding of human relationships and of the processes of thought and emotion existing within individual patients. Intuitive though that understanding may have been and empirical in its application, it has been one of the important instrumentalities of treatment. *In other words, something that constitutes the crude ore of psychotherapy has always been in use.* Like some of the rarer elements now becoming known in physics and chemistry and being put to use in terms of their scientifically known characteristics, the

refined elements of psychotherapy are being discovered and used. It will be my intention to point out that medicine must become aware of this,—much more aware of it than it seems to be at present and that it must be prepared to meet the enormous demand which is bound to occur in view of the statistical projections which I have indicated above. It is already obvious that in numerical production of physicians we shall be woefully inadequate. This makes the adequacy of preparation in view of present and impending demands all the more important. What can we say as to this preparation at the pre-medical level, at the pre-clinical level, and at the clinical level?

Speaking for the moment only of preparation for medical practice in a general way, not insofar as specialization is concerned, is a progressive and enlightened basic preparation for the refined uses of psychotherapy being given? Are those physicians at present in practice, many of whom are engaged in the teaching of the coming generation of physicians, aware of the needs for psychotherapy and its practical uses in the field of medical service? I do not intend to labor the point, but my impression is that there is still a greater proportional preoccupation with physical techniques and the application of physical means of treatment by them than there should be in view of the total picture as to need and effectiveness of remedy. Also in medicine a somewhat peculiar goal-setting tends to deviate teaching in general away from the goal of inculcating the best principles and practice of psychotherapy. This refers to intelligent recognition of the need for it, of its relation to other treatment, and of its use at least at the minimum level in every field of medical practice and at its optimum level in many instances. In this connection, I shall have to make some other observations. One concerns the remarkable development of specialization and sub-specialization in medicine. Here I return to goal setting.

We know that pre-medical education is particularly aimed at getting the student admitted to medical college. This may possibly be, and I believe it is, often at the sacrifice of giving him the preparation which he needs, and particularly that preparation which he will require if, in his later

practice, he is going to use the resources of psychotherapy judiciously and adequately. If the emphasis on having good grades in the physical basic sciences has this effect in setting the very first of the goals, what happens from then on? Is the nature of the medical curriculum and the characteristics and proclivities of the teachers such that there will be supplementation for what has been left out in the haste to reach the primary goal—the admission to the medical college? I doubt that medical curriculums are designed very adequately for this purpose. What, then, is the next goal which is set? My experience with medical students would indicate that it is the goal of specialization.

It is true that a considerable number of medical students still go into general practice. However, medical students are becoming aware that the general practitioner is now a somewhat handicapped member of the profession. His handicap is evident to him when he seeks appointment to a hospital staff, when he contemplates how much the illnesses which affect any human individual are divided up and parcelled out to practitioners of various specialties and sub-specialties who know their own field and its techniques extraordinarily well but who almost make a virtue of eschewing knowledge of things outside their own area of special competence. It is this which lays medicine, and not medicine alone, but the other learned professions open to the charge that they breed modern barbarians—persons not entirely ignorant because they know something very well, intelligent in a highly restrictive and technically selective way, so that one philosopher (Ortega y Gasset) has referred to them, including physicians, too, as intelligent ignoramuses. This is, of course, one of the difficulties of setting the goals to too special and utilitarian ends; of not setting them to the selection of thoughtful men who will use the broad base of knowledge for the purposes which will serve the best overall advantage of the patient.

It is my thought that the specialty of psychiatry is the broadest of all specialties in the setting of goals. In this respect it should contribute something of essential value in meeting an essential need. However, this will not be accomplished easily.

Though one must acknowledge the importance of psychotherapy in medical practice, from the very beginning the most ancient of all the ingredients in the physician's prescription for the patient because it includes the physician himself, one must also acknowledge that its teaching and gaining acceptance for its enlightened use is no easy matter. The obstacles are many and there is grave danger that medicine may lose its prerogative and privilege as to the use of psychotherapy unless there is some change in belief, in attitude, in teaching, and in practice within the fold of medicine. Some of these obstacles have been mentioned, including the preoccupation with special technical and practical goals and the lack of broad vision in planning the curriculums and programs of studies in our medical schools. Other obstacles are the specialist and sub-specialist character of psychiatry as it is commonly known to physician and layman alike. As psychotherapy in its modern form is a product of psychiatry, this becomes an obstacle to its widespread acceptance and use.

It would be very unwise to represent psychotherapy as a thing easy to define, easy to understand in theory and practice, and therefore easy to learn and apply. We realize well that it is quite the contrary in fact. However, the same observations may be made justly about the difficulties in the way of full understanding of the scientific basis for the use of whole categories of physical treatment. Even with reference to relatively simple drugs, such as opium or aspirin, easy to identify, measure, and administer, we know much more about what they do than about why and how they do it. The applications of knowledge drawn from the sciences as they are used in a profession and practical art such as medicine must always allow for a considerable measure of empiricism. This does not mean that no scientific basis will ever be found for what works in practice. Because something works or because we reason that it ought to work and find it doesn't should be a mandate to try to find out why. This applies to psychotherapy. It is well to remember this as a support to one's morale when a medical colleague, at some meeting or, worse still, in the ward of a hospital or at a clinical conference with

students, indicates with some expression of bland and quiet agnosticism that the foundation for most formally practiced psychotherapy is an imagined structure, certainly not a truly scientific one. Such a critic may use certain therapeutic devices quite regularly in his own treatment of patients which we would have to classify as fitting into the general category of psychotherapy,—such things as reassurance, persuasion, suggestion, or most commonly an individually characteristic professional manner. These things very possibly actually glue together the pieces in the framework of his treatment, and still, little question or no question arises in his mind as to their special nature and origin, their relation to himself and to his patient. For him these original, most ancient elements in the art of treatment operate in an almost wholly unconscious manner and of all of the elements that enter into his total program of treatment, they alone are excused from scientific scrutiny. By this I do not mean to say that practically he may not be a good doctor but about no other matter in his treatment armamentarium would he be content to be so ignorant. A skeptic in all else he accepts on faith and as a fact needing no investigation that somehow he has been endowed with the gifts and grace that make him a good physician. When his remedies and techniques work his faith is displaced on to them. His sincere belief in the efficacy of his material agents and his procedures may work wonders for his patients. If his belief is shaken, the wonders may cease.

When I was an intern and resident physician, long before the days of specialty examining boards and with never a psychoanalyst in town, much less a psychoanalytic institute, there was on the attending staff of the Cook County Psychopathic Hospital, a sincere, skillful, kindly and learned physician, thoroughly trained in neurology and psychiatry in his native Germany at the end of the last century. His was one of the largest practices in the city. Nevertheless, he faithfully gave much more time to charity service and to teaching in the hospital than many newly graduated residents do nowadays. In his practice were many psychoneurotic patients. To him the psychoneuroses were physical disorders

with mental and emotional manifestations. He thought there was some deficiency of those usual organic resources of the organism which should have been present to enable it to meet life's stresses. He had three sovereign remedies,—one was an organic form of iodine, presumably especially effective in supporting the activity of the thyroid gland ; a second, sodium cacodylate by injection, the arsenical content of which increased the viability of the red cells ; and the third, two gradations of strength of a sedative mixture to quiet the nerves. These two mixtures came to be known by his name and were procurable at Sargent's Drug Store under the appellations of Dr. X's mixture Number 1 and Dr. X's mixture Number 2. After his first careful examination, his subsequent interviews with patients rarely lasted much beyond ten minutes but were very effective in maintaining results. He inquired as to his patient's symptoms and as to how the directions he had given were being followed. All was carefully written down. He then commented on progress or lack of progress, with his statement of the reasons therefore, and the explanation and revisions of directives until the next visit. Then the sodium cacodylate was injected and as the patient was escorted to the door, the doctor would make some such remark as, "My boy, you are doing well but you should watch how you take your medicine. You come back next week." There is no question that his patients benefited greatly from his treatment. When the doctor was away on his summer vacation, I took his office practice for him ;—and I know they loved and respected him, and that they felt he helped them much. He went to Germany on a visit, and, as I was then in practice, he directed his patients to come to my office and supplied me with full information as to the management of their treatment. While abroad, he died and I fell heir to a practice which I lost entirely in a short time. Somehow, though I attempted scrupulously to honor his memory by treating his patients exactly as I knew he would have wished and as they were prepared to expect, their symptoms grew worse and the remedies were without effect. The patients had an explanation and it was correct, though they didn't really know

just how it was correct. They would tell me something like this : "No, the medicines are not the same. I know you think they are but they can't be. Old Dr. X had some secret thing he put into them that he didn't let you or anyone else know. He expected to come back and now the secret is buried with him." As the years went on I became convinced that they were not far wrong in their judgment. He had a secret ingredient no druggist could put into a prescription. Only he had the power to include it and its inclusion was a secret even from him. It died when he died.

It is the favorite complaint of many psychiatrists that there is a resistance to the teaching of psychiatry and, by and large, this means the teaching of psychotherapy and the concepts to which it is related such as psychodynamics, psychogenesis, and psychopathology, on the part of many non-psychiatric teachers in the medical college. When a program of psychiatric teaching as attempted in cooperation with another department does not work well, the reason is often seen as being a kind of sabotaging lip service overlaying subversion both conscious and unconscious. This reason may apply at times. I am sure that instances can be found which will seem to justify the conclusion. *Nevertheless, the fact remains that psychiatry has not made its point that psychotherapy is an essential ingredient of all medical practice and that understanding of the fundamentals on which it is based is a necessary part of the preparation for all medical practice.* We cannot, in justice, place the chief blame on everyone but ourselves. It must be remembered that, as with the discovery of many of the elements in the atomic series which have been at work practically in the processes of nature since the beginning of the world and whose existence and applications have been only recently discovered, with the elements which enter into psychotherapy, much of the discovery, and this discovery is still in the early exploratory stage, has been made recently. There is a good deal of resistance among psychiatrists themselves to looking into this subject without bias ; otherwise, we would not hear talk of a medical psychiatry as opposed to some other kind of psychiatry. Actually, there is no other kind of psychiatry than

medical psychiatry. *Psychiatry includes many elements and a psychiatrist to be a complete psychiatrist should have sufficient knowledge of the nature, mixture, and effects of all of these elements.* Psychiatric medicine contains elements which are a part of all medicine.

In this connection, I must again refer to the demand created by the public need, a demand which is becoming more and more apparent as the practice of psychiatry returns to its proper focus—the individual in his proper setting, his own community. Last year Dr. Solomon spoke of the impending doom of the large state hospital. It may be that he is correct though I am still not prepared to say that this is the case. We do not as yet have means of curing all forms of mental disorder. We do have somewhat improved means of dealing with the ones that at present defeat our best efforts at securing really effective treatment results. It is conceivable that large hospitals divided into efficient operating units may serve a very useful purpose. Practically, we are not in a position to abandon them as yet.

In the survey of every means of treatment which has been used in mental hospitals, whether large or small and whether the treatment involves hydrotherapy, insulin, electric shock, tranquilizers, group therapy, or the open hospital, one thing stands out high as the peak of Mount Everest,—every time there has been benefit, we discern people striving earnestly and mightily to help other people, watching with interest everything that happens, noting above all the patient's sense of status and comfort and the ease and naturalness of his relations with other people, his attentiveness to social requirements and to taking his place in the scheme of things as do his compeers. These are the principal tests by which the success or failure of therapy is judged. These tests also suggest to us the need for understanding the operation of all of the factors which lead to the results. These are the factors concerned with the thinking, the feeling, the manners and attitudes as found within the patient and as they are related to the thinking, feeling, manners, and attitudes of those about him. Extend this kind of thinking to all types of medical practice and medicine

in general will cease to be so much devoted as it is now to material and technical preoccupations. The emergence of psychiatry from the special psychiatric institution indicates that a change in direction to the community is taking place. We now have a private office practice of psychiatry, the number of mental health clinics has increased enormously, more and more general hospitals are establishing psychiatric units, private mental hospitals are being more and more converted into non-profit institutions, insurance organizations are slowly but steadily giving ground in the payment of benefits for mental illness. The psychiatrist, as a consultant and as a cooperating practitioner, is working more and more closely with other practitioners of medicine. His ideas and methods are surely, even if slowly, gaining wider acceptance. The defense of his methods and his ideas is being undertaken more and more readily by a great number of people within and outside of the medical profession. This being the case, he ought to be as well prepared as possible to render the services expected of him. Therefore, his preparation for practice should receive some attention. Some psychiatrists rather pridefully refer to themselves as organicists probably in reaction to other psychiatrists that they regard as "too psychoanalytic." Now, every psychiatrist in some measure should be an organicist, but no psychiatrist should aim to be exclusively one. He could not succeed in that aim. On the other hand, no psychiatrist should be so purely psychologically oriented that he is content to give merely lip service to the fact that human beings are definitely living organisms and affected by physical conditions including physical means of treatment.

Part of the resistance to the acceptance of psychotherapy and to the grounds upon which it rests has been a too theoretical exposition of these grounds, often with unnecessarily unfamiliar terminology and much reference to mythology. Psychopathology, psychogenesis, psychodynamics, and psychotherapy are things not detached from the living, physical man. While I feel safe in assuming that there is no physical disease without its mental and emotional components, I am still safer in saying that no disembodied psyche ever came into my

office. Common accusations made against psychiatrists concerning their attempts to present a rational view of psychotherapy are that they are too much inclined to test their own theories quite subjectively, too deterministic in their views, the determinism being conditioned exclusively on the basis of their theoretical concepts and allowing too little for exceptions, too inclined to judge maturity in terms of psychosexual development, and to regard all variants of behavior as abnormalities. Above all, the techniques and methods often considered to be of the greatest psychotherapeutic significance, and especially orthodox psychoanalysis, are commonly ones that are extremely time consuming, expensive, and therefore applicable only to a highly selected group of people suffering from a very limited category of psychiatric indispositions and illnesses. The doctrinaire system in fixed form and without modification will follow the fate of all the special systems. It will not find a lasting place in medical practice. I think we can count upon the fact that medicine will tolerate a system in fixed form and without modification for only a very limited period of time. It has always borrowed freely from any source it chose. This must apply in the case of special systems of psychiatric treatment. It will select from them the things that have been proved of value in use. Many things often urged as of essential importance are adventitia related to but not of the essence of psychotherapy as a physician must know it and use it. It is a thing he must know in its essential characteristics, not something he must be loyal to as a system of orthodoxy.

Psychotherapy is not easy to define. There may be some individual who feels he has defined it satisfactorily. When groups of persons skilled in its use and well informed as to current theory concerning it attempt to define it, the attempts turn out to be quite unsatisfactory in the result. There are certain describable characteristics which are generally acceptable. I believe that these must be the departure points for explorations.

It is a method which involves communication between patient and doctor; it is a method in which feeling and emotion play a large part. The object of the communica-

tion is ostensibly to give the doctor as complete, honest, and confidential a view of the patient's interior workings and history as it is possible to obtain. This is for the purpose of enabling the physician to understand the motivations of the patient's internal operations which may be related to the production of symptoms. Due deference is made to the patient's need to understand also but since the patient does not have the physician's experience to provide him with criteria and standards of comparison, it is very doubtful that even in successful psychotherapy his understanding of himself will be very complete. From the viewpoint of feeling and understanding, it is not a one-sided operation involving the patient exclusively. The physician does have a requirement resting upon him at the very beginning of psychotherapy which, while different from that resting upon the patient at that time, nevertheless exists and must be recognized. The physician will have to have objectivity and understanding, not only about the process of treatment which he is using but also about himself, particularly with reference to his own emotional motivations. This is extremely important for he has to guide and control the application of the therapy and the steadiness and sureness of his technique here is as important as the sureness of the surgeon's technique in the guiding of a knife. Confidentiality of communication is an essential to gaining a clear view. It is also an essential for allaying the patient's fears. The understanding of the emotional aspects of psychotherapy becomes more and more important as the therapy proceeds and a special emotional relationship is built up between the therapist and the patient in which the patient practices upon the therapist and others his habitual and often misdirected behavior while the therapist attempts to aid the patient achieve better behavior. In the process of psychotherapy repeatedly there comes to attention the importance of the closer, significant human relations of the patient's past and present in their bearing upon the patient's development and conditioning as to behavioral reaction in all new relationships.

There are many pitfalls and dangers in applying a therapy based upon such principles. Also, the techniques by which it may

be learned and the techniques through which it may be applied are time consuming and somewhat complicated. Consequently, teachers of medicine are often inclined to seek short-cut methods which will give them a speedy index of what is presumably wrong with the patient and short-cut methods to correct what is wrong effectively and promptly. Unfortunately, this cannot be done, at least very often. The result may be abandonment of all attempts at rational psychotherapy and the use of intuitive procedures only. This happens in spite of the fact that, as I have stated repeatedly, the physician-patient relationship, the importance of the physician as a person in the patient's eyes, have always been recognized in medicine as being of transcending importance. This alone would seem to indicate that the relationship implicit here deserves intensive and intelligent exploration.

Should medicine ignore the obligation to study the scientific basis for psychotherapy and all that is implied in the study of this scientific basis, then that study and the applications deriving from it will be the work of others not medically trained. Psychologists have been engaged in research in this area for some time. Some of our states have licensed clinical psychologists for the practice of psychotherapy. The most ancient ingredient of the medical prescription, the mother ore of psychotherapy, is being refined for use as a modern, rational psychotherapy. How much of the refining and how much of the use of the refined product will be the task of others than physicians remains to be seen. When the effectiveness of a remedy in treating human ills is clearly evident, medicine never fails to appropriate it. This furnishes the chief assurance that psychotherapy will remain in the province of medicine. There was a day when leading obstetricians scoffed at the idea that puerperal fever was carried from patient to patient on the hands of the accoucheurs. In the light of evidence opinion and practice had to be changed. The evidence as to the scientific respectability and practicality in application of modern psychotherapy is beginning to be appreciated.

Intensive study of psychotherapeutic procedures and of their results is going on

in many research institutes. The problem of establishing scientifically valid controls and methodology is obviously difficult. Psychologists are contributing no small share to these investigations. For the third successive year the Hofheimer Award of our own American Psychiatric Association has been given by an all-psychiatric jury to a psychologist. In the field of practice, clinical psychologists are no longer content to engage only in diagnostic testing. They wish to practice psychotherapy and they do, under medical supervision and without it. Its nature and quality are open to question. Psychologists, themselves, assert this to be the case, and state that it is one of their reasons for seeking some measure of legal control through certification or licensure laws. Meantime, physicians, including the psychiatrists, are unable to meet the demand for giving psychotherapeutic aid to patients in the office, the clinic, the hospital. If the psychologist offers his service to an overcrowded and understaffed state hospital, it is vain to protest unless one is able to provide something better. On the contrary, this aid is often welcomed,—and by the psychiatrist. Usually in the medical institute and clinic this is the case. The issue which exists between physicians, and at this moment the physicians are chiefly psychiatrists, and clinical psychologists concerning the practice of psychotherapy will not, in my opinion, be settled satisfactorily along organizational and political-legalistic lines. License to practice medicine came only after experience had demonstrated the values of medical treatment and the need for qualification through medical training and experience to deserve that licensure. License is a right only in a limited sense. It is a privilege earned. The physician must never be in the position of fighting a privilege which may possibly be accorded to others on the ground that it is his exclusive right to enjoy that privilege. Licensure laws are based on the principle that the citizens of the state are the ones to be protected. They grant rights to those licensed in view of this and they place certain obligations and responsibilities upon the licensee as to special preparation for rendering a type of service. The license may be for a limited kind of service or it may be a broad license. The license to

practice medicine is a broad one. It is the result of a long process of growth of the medical tradition. It presupposes a code of ethics, and a broad-based understanding of everything involved in the causation and treatment of human illness. It is an extensive license because it also presupposes that the profession of medicine will ensure that its practitioners are the best prepared in their day and age to offer the best that can be offered to fight the ravages of illness. No other license in the field of treatment is as extensive as ours. The obligation is upon us to bear the responsibilities entailed in licensure as well as to enjoy the privileges. Understanding of the scientific basis of psychotherapy will require continued experience in application and intensive research. I am sure that within the field of medicine we shall give it just this which it requires. I cannot believe that treatment can be divorced from the full resources of diagnostic procedure. These procedures involve the body and the mind whether either the body or the mind seems to be sick. That psychotherapy can be given effectively without due consideration to the full basis for training in diagnosis does not seem reasonable. It is true that it may be delegated to others as a technical procedure but, if it is, we do not escape our obligation to the patient to see that it is properly managed and supervised. It cannot be a matter of "you do that and I'll do this," a partitioning of practice involving divorcing of responsibility. It is difficult for me to understand how a physician who feels himself incompetent to evaluate the need for psychotherapy except on grounds of exclusion of presently existing physical illness and who wishes no acquaintance with its techniques can give adequate supervision of psychotherapy to one he asks to render the technical service. He would be in a better position to do so if he possessed a goodly measure of the knowledge of psychotherapy, of the foundations upon which it rests, the indications for its use, and the controls which should be applied to it. Psychotherapy has a place in the armamentarium of the physician. It is not to be taken for granted as being a natural characteristic or gift of a physician consisting only of such things as intuitive perceptiveness, an ability in hearty

reassurance, persuasive argumentativeness, facility at suggestion, opportunistic manipulation, bedside manner, or parade of scientific knowledge at the head of a military-like procession as medical rounds are made. Such things may often appear impressive. They do have their effects—sometimes good, sometimes bad—but they do not truly justify the name of psychotherapy as a physician should know it in this day. I will not pretend that anyone understands fully and completely any of the operations of the human organism and that anyone has finally and completely perfected any treatment procedure. This statement applies in the case of psychotherapy as it does to other therapy. At this time there is available much information and understanding of what psychotherapy involves. This information and this understanding should be possessed in its general form and be used intelligently by everyone who merits the name of physician. Full medical service to the sick of the land requires this. Medical education should accept the obligation of providing it.

Medical practice, the treatment of the sick, has been built about two things, the knowledge and understanding of human beings,—body and mind, and the unique characteristics of a physician-patient relationship. All else, the material agents and the procedures for their use have been added to the essential nucleus. These added things may change very much from age to age. The essential center remains from age to age. This center may be looked upon as the mother ore for psychotherapy. Thus, psychotherapy is to be accepted as an essential element of all medical practice. To be of most use the ore needs benefit of the most scientific refining possible. This is a task to which psychiatry has set itself and from which all medicine should profit. There is an increasing need for rational psychotherapy and the mandate is for medicine to supply it. No other kind of professional practice so fully encompasses the mortal requirements of the body—mind—soul entity known as man when there is sickness. Goal setting in medical education should be determined in the future much more by these considerations than it has been in the past. All physicians, regardless of the

specialty they practice, should have utilizable knowledge of psychotherapy. This should result in elevation of the status of the general practitioner and in deemphasis

of technical subspecialization. A movement toward such results is necessary if the physician is to remain in a position of public respect and professional prestige.

FRANCIS J. GERTY, M.D.,
Eighty-fifth President—1958-1959 :

A BIOGRAPHICAL SKETCH
FRANCIS J. BRACELAND, M.D.¹

He is at home in any society, he has common ground with every class ; he knows when to speak and when to be silent ; he is able to converse, he is able to listen . . . he is a pleasant companion and a comrade you can depend upon.

—NEWMAN

Trotter in his biographical sketch of John Hunter declared it idle for the common man to try to explain the successes and failures of greatness but he conceded that it was not presumptuous to examine the circumstances of an individual's life for light upon his career and accomplishments. As we examine the life of Francis Joseph Gerty, we appreciate that his heritage and early circumstances give eloquent and prophetic testimony of his future accomplishments and the manner in which he would receive honors and undertake the tasks entrusted to him.

It is possible to follow the weddings and peregrinations of the Gerty forbears back through the seventeenth century. There were Spanish and French and French Canadians, and an ever so generous admixture of Irish among them. We find them settled in Chicago long before Mrs. O'Leary's cow had her disastrous encounter with the lamp. The marriage of Frank K. Gerty and Josephine Vincent Gerty, was graced by 5 children and Francis J. the eldest, was born November 17, 1892. A younger brother, A. Vincent Gerty, a Fellow of The American Psychiatric Association, and one-time superintendent of the Los Angeles County Psychopathic Hospital, is presently practising psychiatry in Pasadena, Calif.

BACKGROUND

Gerty, père, an alumnus of the University of Illinois, was a school master, dedicated to his calling. After he was promoted to an administrative post he continued his educational work by tutoring immigrant boys and also held educational court in his home

on week end evenings. His son Francis was one of the beneficiaries of his love of pedagogy and before the boy had finished grammar school he had acquired from his father a basic knowledge of literature and mathematics, an understanding of what and how to study, and most important of all he learned the love of books, a priceless gift he was always to cherish.

From a gracious mother the Gerty children learned many things, among them the virtues of basic friendliness and kindness and also they were taught *en route* by precept and example that most obstacles could be overcome. Though there was a consistent serenity in the maternal make-up, there was also a determination that her children should succeed as individuals, as well as acquire an education. Fortunately she lived to see these aims accomplished.

There are many stories of the young man agrowing, too numerous to mention here. There were various jobs, hobbies and enterprises ; one of the latter might have had prognostic value. While serving as a delivery boy at the age of 13, he figured out a way to ride trolleys all over Chicago by a judicious use of transfers for only one nickel ! Seemingly he was fitted for a financial career.

Graduating from the Chicago Public Schools in 1906, Englewood High School in 1910, Chicago Teachers College in 1912, the youth launched on a teaching career in the Chicago schools in the family tradition. He taught first in the grammar grades but later changed to the vocational arts for two reasons, one, the love of doing things with his hands, and two, the vocational job paid better by far. Also, by now he had decided that medicine would be his

¹ Inst. of Living, 200 Retreat Ave., Hartford 2, Conn.

bodies and with numerous demands upon his time, he is superintending the building of a new house, mostly, his good wife states, *in absentia*.

Dr. Gerty's public activities embrace all of the advisory psychiatric positions to the Illinois authorities, the most recent being that of Chairman of the Illinois Psychiatric Council. Also he holds appointments on the Psychiatric Training and Research Authority of Illinois, a statutory body and the first of its type. His hospital appointments start back in 1923 and include Mercy, University, St. Lukes, Hines, Cook County, and now the Chairmanship of the Department in the new Presbyterian-St. Lukes Hospital.

It is interesting that, except for an occasional excursion into A.M.A. tasks and as a consultant to the New Mexico state hospitals, most of his work had been kept within the confines of his native state until the late forties. It was not until the years following World War II that he began to appear regularly with the national bodies. Soon it was established that when there was a difficult task to be performed, one sought Dr. Gerty to do it, whether it concerned the introduction of an orator whose words would be sure to cause unrest, or the discussion of the paper of an individual who was controversial. As chairman of a committee to evaluate the role of psychoanalysis in psychiatric training in the Cornell Conference, he distinguished himself by his statesmanlike conduct of an inquiry into a subject which needed expert and careful examination and won national repute. He was in demand for all types of duty. The Group for the Advancement of Psychiatry, the Section on Nervous and Mental Diseases of the A.M.A., the Central Neuropsychiatric Association, the Advisory Councils of the U. S. Public Health Service and the Veterans, the American Board of Psychiatry and Neurology, chairmanship of the Committee on Medical Education, the Council, then President-elect and then President of The American Psychiatric Association, plus the Presidency of the American Board of Psychiatry and Neurology at the same time. To all of these tasks he lent his wise judgment and dedication and he won the respect and admiration of his col-

leagues. In the search for biographical data, while people were questioned whose beliefs diverged widely from his, none was found who did not pay high tribute to him as a physician, teacher, administrator, and as a man. One noted colleague from a foreign land, whom Dr. Gerty had befriended, noted how skillfully he protected his researchers from political interference and secured funds and opportunity for them to carry on their work. He says: "The way he 'kept' his scientists reminds me of the Medicis who gave every possible support to the artists they engaged but left them free to work according to their own fantasy. There is something in this man's character that resembles the great figures of the Renaissance."

Dr. Gerty belongs to all of the important local and national medical and psychiatric bodies. He was elected to AOA, Sigma Xi, and Blue Key, all honorary societies. His publications run the range from those done in collaboration with G. W. Hall in 1923 on *Folie à Trois* and in 1927 on *General Paresis*, to those in 1957 on *Biochemistry of Schizophrenia* and on the *Individualization of Treatment in the Aging*. Between these there are numerous publications on history, on the civil law, on phosphorus metabolism—even one, believe it or not, on the *Clinical Effects of Moonshine Liquors*, done for the *Public Health Journal*.

Dr. Gerty is a devout man, secure in his own beliefs and completely respectful of the presence or absence of belief in others. In 1957 he was honored by Pope Pius XII and was made Knight of St. Gregory the Great. In the same year Loyola University awarded him the degree, Doctor of Science, *Honoris Causa*. Among the finest of things are those which point out that he is a family man, with a deep love for his wife, his children, his home, and his friends.

Perhaps the statements of two men of widely divergent viewpoints, neither of whom is given to flattery or hyperbole, will typify the regard in which Francis Gerty is held by persons of all persuasions. One, an internationally famous psychoanalyst, says of him: "All in all he is a liberal in the best sense of the word. Extremely aware of and resistant to any undue infringement

on the spiritual freedom of the individual, without being a rebel in the least, he is a leader *par excellence*." The other, a distinguished neurologist and neurosurgeon, says: "His devotion to the public cause, at great sacrifice to himself, is a matter for emulation on my part. It will be a sad day for psychiatry in the State of Illinois when he disappears."

It has been said that the great lesson of biography is to record man at his best and

that a noble life put fairly on record acts as an inspiration to others. In the case of Francis J. Gerty this is certainly true. Those of us whose privilege it has been to work with him and to watch him skilfully handle difficult situations with consummate kindness and tact realize that he is strong because "he has the repose of a mind which lives in itself while it lives in the world and which has resources for happiness at home when it cannot go abroad."

HUNGARIAN REFUGEES: LIFE EXPERIENCES AND FEATURES INFLUENCING PARTICIPATION IN THE REVOLUTION AND SUBSEQUENT FLIGHT¹

LAWRENCE E. HINKLE, JR., M.D., FRANCIS D. KANE, M.D.,
WILLIAM N. CHRISTENSON, M.D. AND HAROLD G. WOLFF, M.D.²

During the period from December, 1956 through September, 1957, 69 Hungarian refugees were interviewed, examined, and observed at the research facilities of the Human Ecology Study Program, in New York.³ The group of informants was carefully chosen to include students, scientists, members of professions, intellectuals, skilled and semi-skilled workers and adolescents, whose motives and behavior were of special interest because of the leading role that such people had taken in the Revolution of October, 1956. Only a few former landowners and members of the old middle class were included. Some of those studied had held positions of trust and responsibility in the Hungarian Communist State, and had been favored members of the society. Many had been acceptable to the Communist Party, and had been associated with its ancillary activities, although they were not actually party members. In order to have data from former Party members also, some of the staff of the Study Program went to Great Britain in the summer of 1957, where they tested, interviewed, and examined 7 additional refugees who had been active Communists, some of whom considered themselves still to be so.

The goal of the investigation was to determine, as far as possible, the factors that had had an important influence upon the behavior and health of these Hungarians. It was, therefore, a study of individu-

als, rather than of the group as a whole, and our conclusions are chiefly pertinent to the behavior of these individuals; however, some of them undoubtedly have a wider general applicability.

The investigation was based upon the hypothesis that the behavior of a man is determined by his constitutional characteristics, his cultural background, his position in the society in which he lives, his developmental experiences, his later life experiences, and his total life situation as this is perceived by him. The procedures were designed to gather data in each of these areas. They included an assessment of the constitutional characteristics of each informant, a careful and extensive chronological life history, a detailed history of all of his illnesses, interviews with sociologists, psychiatrists, and a cultural anthropologist, a series of psychological tests (including the Rorschach, Wechsler-Bellevue, TAT, a projective questionnaire, and a sentence completion test), a physical examination and a period of observation during an informal evening's entertainment. The whole investigation required two days of each informant's time. Each became a source of information about the attitude and behavior of the groups of which he was a member, as well as about his own behavior during his lifetime.

A good deal of effort was focussed upon an attempt to determine why these people fought and fled. The observations give no support to the idea that the revolution and the subsequent exodus were simply the result of the unpremeditated action of people swept up in a wave of mass emotion. On the contrary, they indicate that those who participated in these events had long-term, deep seated, realistic, and highly personal motives for their actions. This was true of nearly everyone studied, regardless of his background or behavior; it was such a regular observation among the students, adolescents, workers, teachers, scientists,

¹ Read at the 114th annual meeting of the American Psychiatric Association, San Francisco, Calif., May 12-16, 1958.

² From the Study Program in Human Health and the Ecology of Man, Departments of Medicine and Psychiatry, New York Hospital-Cornell Medical Center, New York, N. Y.

³ Among those who participated in these studies were Eva Bene, Ph.D., Sandor Borsiczky, M.D., George Devereux, Ph.D., William J. Grace, M.D., Ari Kiev, Maria H. Nagy, Ph.D., Thomas J. O'Grady, Jay Schulman, M.A., Richard M. Stephenson, Ph.D., and William N. Thetford, Ph.D.

and professional people that there is very good reason to believe it is true of the refugee group in general.

Their motives fell into two general categories. The first was a long-term and insurmountable feeling of personal insecurity—an implicit belief that, "No matter what I do, or how high a position I may attain, I and my family may be ruined at any time by the actions of others, or by events beyond my control." The second was a profound sense of frustration—a deep-seated conviction that, "In Communist Hungary there is no way that I can live out my life as I want to, and in a manner that satisfies my needs." The motives of the individual refugees were not based primarily upon irrational and generally shared prejudice, upon unformulated fear, or upon abstract political or religious convictions; they were based upon personal experiences with confiscation, denunciation, arrest, imprisonment, and the denial of jobs, housing, and education. Such motives were as strong in those who had been ostensibly favored by the Communist Government as they were in those who had been officially designated as "class aliens."

None of the informants—not even those in a position to be well-informed—had expected the revolution to occur when it did. No group had planned it. The great majority of the informants had not been aware that many other Hungarians felt as strongly as they did. Yet all had been aware of their own intense dissatisfaction for many years past, and a very significant proportion of them had privately decided, long previously, that they would flee from the country, or take part in rebellion, at the first opportunity. In this, many of them were supported by their families—even by family members who knew that they would be left behind. Thus the fight and flight of an individual might have been sudden, but his behavior was not unrealistic, and often not entirely unpremeditated.

Economic deprivation was a poor determinant of behavior. Some of those who participated most vigorously in the revolt were people who were economically better off than they might have been under the old regime, and knew it; others, including members of the old middle class and former

landowners, who had been reduced to subject poverty, took no part in the fight but simply fled. The group as a whole was relatively little concerned about the economic organization of the society. Their resentments were focussed upon its "police state" aspects—its arbitrariness, restrictions, brutality, and unpredictability.

Only a minority of our informants had participated in the actual fighting, although all had sympathized with the revolution and many had supported it tacitly or by ancillary activities. Those who took up guns and fought regardless of the consequences were people who readily acted out their hostile and aggressive drives. In general they came from segments of society in which fighting is acceptable behavior; they were adolescents, working people, former soldiers, and former political prisoners. Writers, teachers, scientists, and professional persons confined themselves to organization, propaganda, supply, communication and like activities.

The group as a whole displayed a deep-seated hostility toward Russians. This had been strongly reinforced by Russian behavior during the past 15 years; but there was much evidence that anti-Russian attitudes existed in their parents before World War II, and that the younger generation had derived their own attitudes primarily from those of their parents.

They had a similar hostility toward the people who made up the central Communist Government group, and toward many of the local functionaries and hangers-on. Attempts by the Communists to indoctrinate young people, students, and workers by means of propaganda, education, and other activities had been singularly ineffective in eradicating such attitudes. Even favored young members of the Communist Party—students and intellectuals who were relatives of prominent Communists, who had grown up in the Party, and who had no real memory of life as it was before 1947—were disillusioned and bitterly opposed to the Communist system. They had learned to form their beliefs and attitudes from what they saw and knew, rather from what they heard or read. They regarded some socialist economic reforms as desirable, but for Communism and Com-

THE SALIVARY CURVE: A PSYCHIATRIC THERMOMETER?¹

GEORGE F. SUTHERLAND, M.D.³

The remarkable sensitivity of the salivary secretion in reflecting the internal and external milieu, led us to wonder if it might be adapted as a clinical adjunct to measure the emotional status. The observations presented are taken from a larger study concerned with the investigation of "internal inhibition" (in the Pavlovian sense of the term) by the method of conditional reflexes. They are merely incidental findings and do not constitute a coordinated attack on a particular viewpoint. They are presented in the hope that they may stimulate interest in widening the scope of evaluating those aspects of emotional life that have proven so elusive when attempts are made to reduce "impressions" to a more concrete form. The record of the flow of saliva may be likened to the electroencephalogram which, though not strictly mathematical in form, nevertheless can be compared with others taken in a similar manner.

The salivary conditional reflex, I fancy, was not chosen by Pavlov as a subject for study because of some inherent property that gave access to the secrets of nervous function but rather because of his continuing interest in the digestive processes. Nevertheless, it has much to recommend it as a medium of investigation. Without requiring any operative interference the parotid secretion is readily available in man for recording purposes by means of a small suction capsule(1) applied directly over the opening of Stensen's duct. (Fig. 1) The types of stimuli required to induce a flow of saliva are specific and can be controlled. They fall into two groups: those concerned with alimentation and those directed toward combating irritants. Ordinarily the reflex is not subject to acts

of will, thus eliminating random or deliberate activity that so frequently complicates the interpretation of motor defense reactions. On brief stimulation the reflex is elicited promptly, usually in one or two seconds, and its effects continue for some 8 to 10 minutes, allowing detailed observation but still falling within the convenience of a daily experimental session consisting of from 4 to 6 combinations of signal plus reinforcement. The response is determined not only by the specific stimulus but also is subject to modification by the internal and external milieu which makes possible the opportunity to measure these factors. Finally, the salivary reflex offers a bridge to collate the traditional Pavlovian work in animals with analogous studies in man.

The failure to demonstrate the conditional salivary reflex on the part of many investigators has been attributed to the readiness with which inhibition is developed by the human subject. It is this same facility of elaborating inhibition that offers the advantage in this investigation. Actually we have experienced no difficulty in demonstrating the reflex. Technique and instrumentation are probably the answer. From a technical standpoint the difficulty is about the same as that of recording the electroencephalogram.

Recently I was surprised to read the statement by Bykov(2) that many investigators, including Gley(3), Langly, Winsor and a number of the Russian neurologists failed to form a salivary conditional reflex in an adult individual.⁴

Fig. 2 illustrates a conditional salivary reflex in an adult and this is not a single example by any means. I doubt that it is much more difficult to demonstrate the salivary reflex in man than in the dog. I would point out that in animals one usually

¹ Read at the 114th annual meeting of The American Psychiatric Association, San Francisco, Calif., May 12-16, 1958.

² This study made possible through the cooperation of the Research Department of the Spring Grove State Hospital, with assistance from Friends of Psychiatric Research, Inc.

³ Chief, Division of Psychiatric Education & Training, Department of Mental Hygiene, State of Maryland, Baltimore, Md.

⁴ I could not help noting that the formation of the reflex in children was accepted presumably because Krasnógorsky(4) had written on the subject but come to think of it I do not recall if anyone since has confirmed the work. This brings to mind an amusing incident that occurred while I was working in Montreal in the early thirties. L. Andreev, from Pavlov's laboratory was also there at the time as an

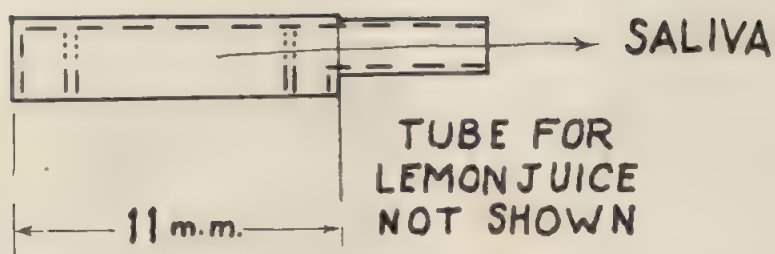
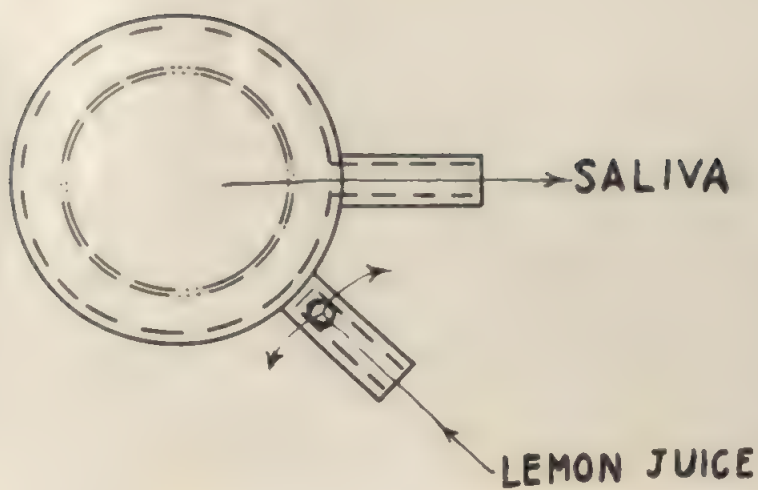


FIG. 1

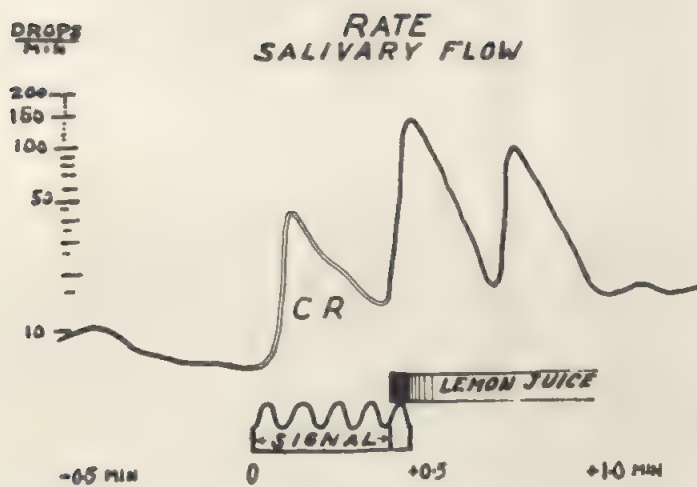


FIG. 2

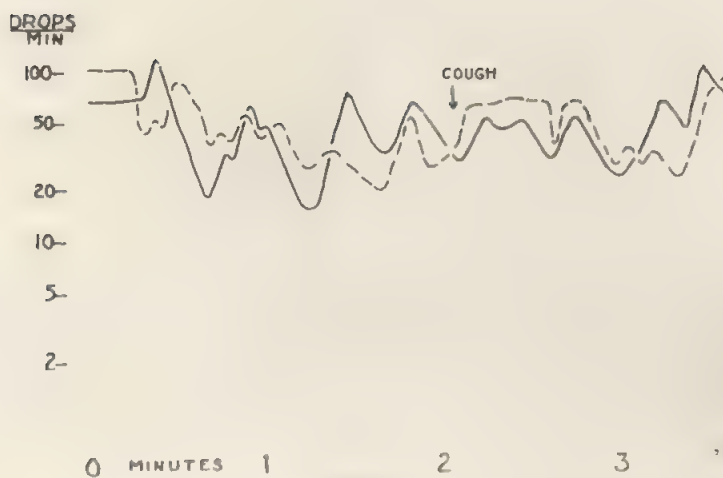


FIG. 3



FIG. 4

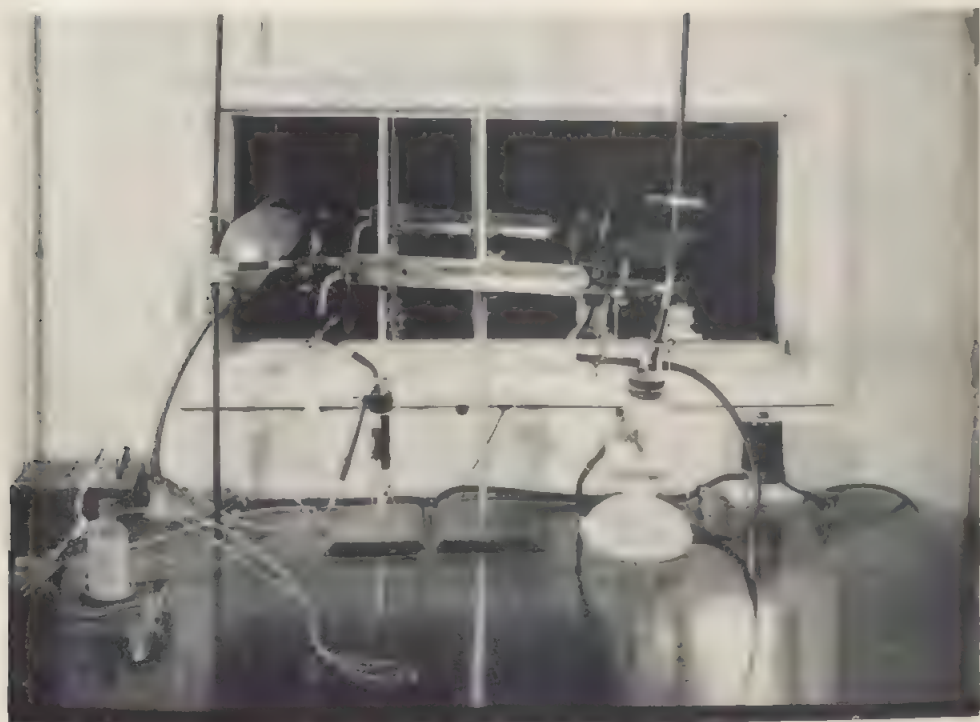


FIG. 4A

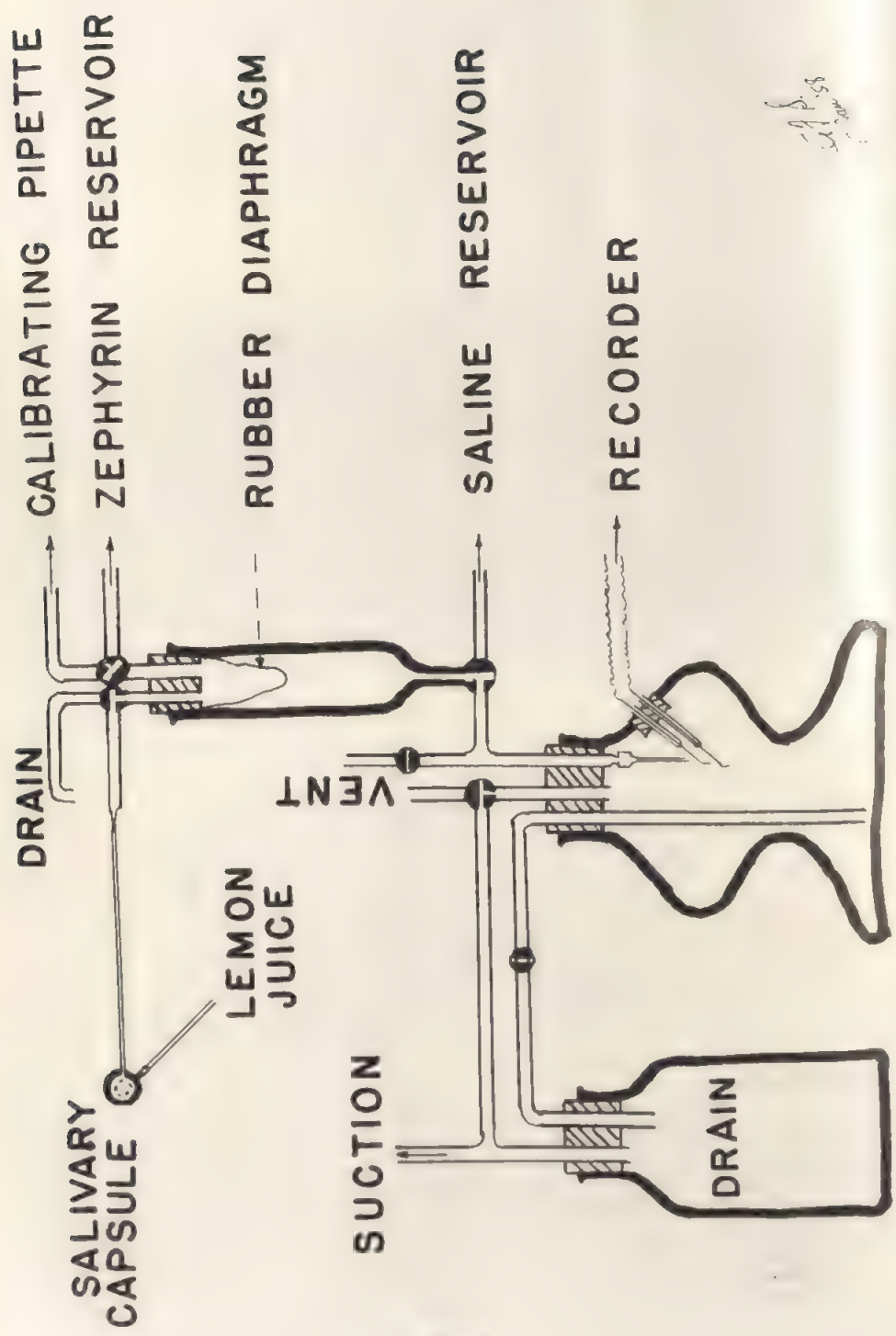


FIG. 5

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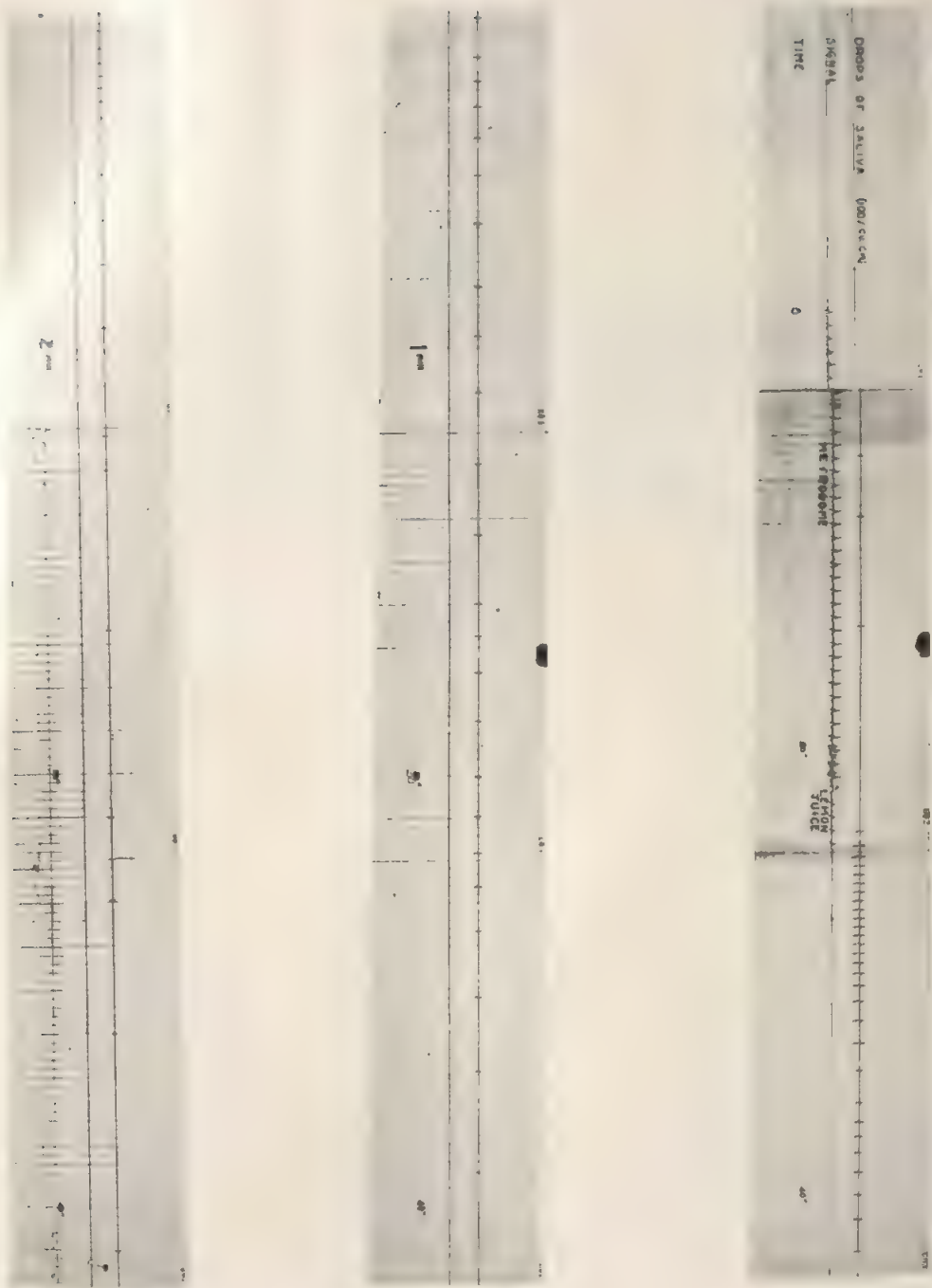


FIG. 6

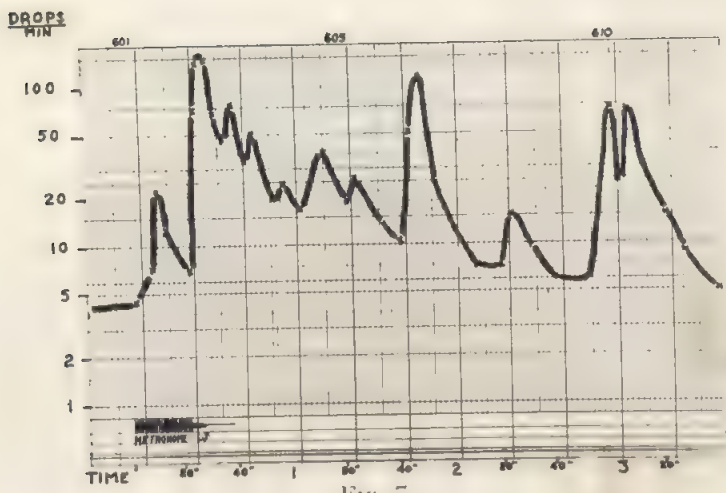


FIG. 7

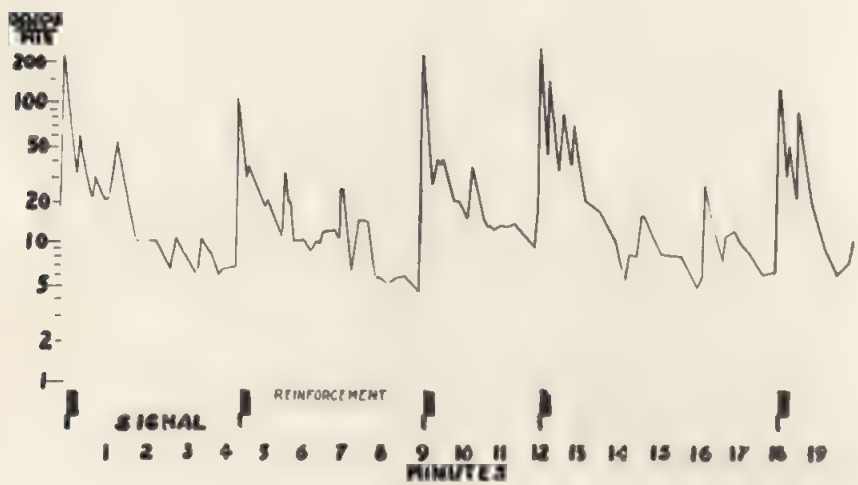


FIG. 8

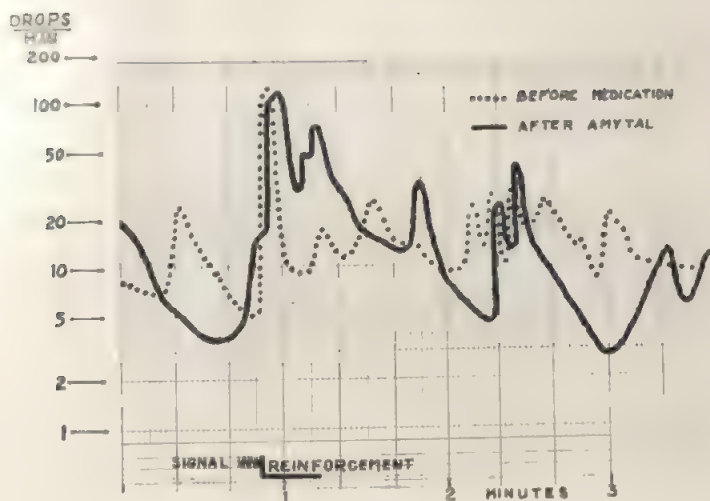


FIG. 9



FIG. 10



FIG. 11

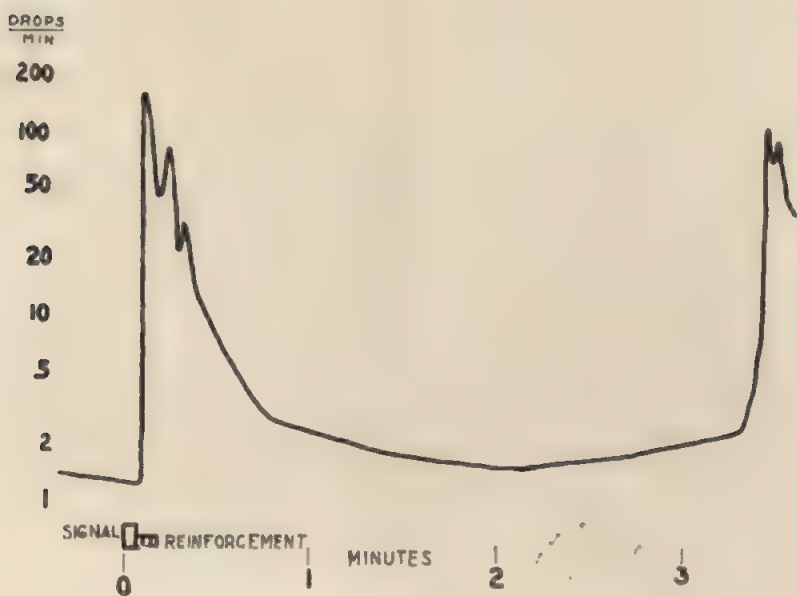


FIG. 12

chooses a "good secretee" and by the same token discards those that fail to answer the purpose as readily. From a medical standpoint this cannot be done in man, especially in the case of patients, if the results are to be statistically valid.

It seems true that inhibition is much more easily mobilized in man than in animals but when attention is paid to this fact there is no question that conditional salivary reflexes can be formed and demonstrated under laboratory conditions. In fact, there is no way to prevent their being formed—it is in the demonstration where the difficulty apparently lies. Anyone familiar with the technique of the conditional reflex method is shocked to see the recklessness with which the average laboratory procedure is carried out. Extraneous stimuli are at work and it is inconceivable that they fail to play havoc with the finer nuances of the technique. I am convinced that a whole world of information is consistently—one might even say deliberately—missed. The argument that there is no time for *fol-de-rol* in a clinical setting loses its validity when one considers how often inconclusive or even misleading procedures are repeated in an effort to arrive at a definite conclusion.

The demonstration of the conditional reaction in a laboratory requires more than the usual vigilance accorded clinical procedures. It must be realized that the whole thing is an artificial setting designed to isolate a single element in the psychological field and relate that to an unconditional reflex. From a physiological standpoint this is a most tenuous link temporarily established and it is not surprising, therefore, that its most striking characteristic is its variability. This shows itself in the prompt variations in flow that ensue in response to minute changes in the environment. Tandem experiments

exchange professor. On one occasion I told him that I proposed to use cats as subjects for motor conditional reactions. He said that the notion was laudable but warned that it was futile because it had been found in the Pavlovian laboratory that they could not be used as subjects in experimental procedures. After a few weeks had elapsed I demonstrated the motor reflexes (similar to those shown in the motion pictures by Masserman), whereupon he smiled and vouchsafed that Canadian cats were different from Russian cats!

demanded that I use only cats that had been brought to the laboratory from the same source. I was never informed that in any manner it is easy to identify a cat's reaction as being ill because of some factor in reaction to both subjects. The following is an example of these peculiar reactions and one in which, though, by one of the subjects, could be identified by the observer. Frequently it would appear that the observer passes unnoticed by the subject as well as "subliminal perception". This sensitivity of the secretion rather than being regarded as a hazard is probably the chief attribute that enhances its value as a measure of factors that are influencing the function of the organism, perhaps even subconsciously.

To demonstrate the conditional reflex in the laboratory one must guarantee a relatively uniform environment and a rigid adherence to the technique which includes every influence that might affect the subject's psychological field. The nervous system takes note of every stimulus that impinges upon it whether or not it happens to be included in the protocol.

With regard to the conduct of the experimental procedures a word should be mentioned with respect to instrumentation. Since the flow of saliva in man is rather small in response to brief stimulation a liquid-filled system is desirable for transmitting the minute changes in pressure from Stensen's duct to the recording apparatus. An air-filled apparatus because of its slight inherent compressibility will usually fail to pick up the instant the salivary flow is initiated and as a result no record of the conditional response is obtained, or else inordinate delay distorts the time components. The whole curve will be smoothed out, thereby losing the detail of the sharp fluctuations in flow. It is virtually impossible to gain an accurate picture of the flow by the simple expedient of observing a manometer rather than having it mechanically registered in the form of small drops. The size of the drops should be of the order of one-hundredth to the cubic centimeter. This accomplishes two things: it records small changes and causes the drops to pass over the electrodes quickly, thus ensuring a prompt registration.

For a laboratory, two adjoining rooms are used situated in a rather remote quiet section of one of the hospital buildings.⁵ During the experimental session the observer remains in one of these rooms but can view the subject in the other through a one-way glass. Fig. 4.

Fig. 5 shows a diagram of the sialometer adopted in these investigations. The saliva is collected by means of a salivary capsule fitted over the opening of Stensen's duct. A single chambered capsule was used with one or two rings concentrically placed to prevent the mucosa from invaginating into the opening and blocking it. A small tube (#190 polyethylene) leading from the capsule conducts the saliva to a reservoir whence the pressure is transmitted through a diaphragm which in turn displaces an equivalent amount of saline through the drop recorder. The electrical impulses are generated when the drop closes the circuit through an amplifier that operates the recording pen.

First, all the air is eliminated from the system, then the capsule is applied and the valves turned as shown in the diagram. After a few seconds the suction will hold the capsule in place and the test can begin.

The principal signal that we have employed is an electric metronome. Reinforcement is supplied in the form of one cubic centimeter of sweetened lemon juice that is conducted from a syringe by a second small tube that opens on the outside of the capsule.

Fig. 6 shows a positive conditional reflex as it is actually registered by the pen. This record was taken on the fifth day of a series, using a member of the staff as a subject. Each daily session consisted of approximately 5 combinations of signal and reinforcement.

Fig. 7 shows the same reflex when transformed into a chart showing the rate of flow of the saliva. Subsequent charts will appear in this form.⁶

⁵ Spring Grove State Hospital, Baltimore 28, Md.

⁶ The problem of preparing a chart showing the rate of flow from the tape that records the drops of saliva is a tedious procedure. The interval between each successive drop must be measured using an appropriate reciprocal scale and plotted accordingly. To obviate this we have recently used an integrating amplifier in tracing the curve directly. The impulse

For each experimental session a protocol is prepared in advance and followed precisely. This is devised to avoid the unnecessary generation of inhibition and to prevent the elaboration of a "time" reflex. To accomplish these purposes the signals for the most part are kept short (3 to 5 seconds) and are repeated at intervals that vary (3 to 8 minutes). When the conditional reaction is to be tested an occasional signal is prolonged (10 seconds to 20 seconds) and the reinforcement delayed proportionately. The duration of the signal is considered as being from the initial sound of the metronome until the application of the lemon juice. To provide continuity the metronome overlaps the beginning of the lemon juice. The application of the lemon juice can be recorded with a fair degree of accuracy but the duration of its effects obviously must be considered variable.

In response to a brief stimulus, saliva is secreted in a series of spurts rather than by a continuous stream as might have been anticipated. The rate of flow rises swiftly to a maximum but then declines by a succession of ever-diminishing fluctuations tracing a curve that lasts about 8 minutes before the baseline is resumed. (Fig. 8) I hasten to add that this curve is seen in its entirety only under perfect conditions but usually one or more cycles are clearly apparent. These certainly correspond to the Pavlovian phases of positive and negative induction. Superimposed on this parent curve are minor recurrent variations of undetermined origin.

The gross contour of the major curve approximates the following mathematical formula:

$$\gamma = e^{(\ln x)t} \sin 2\pi T$$

suggesting that the oscillations represent the fluctuations of a feed-back mechanism whereby equilibrium is re-established. In this connection it is interesting to call attention to the fact that Pavlov alludes to such a homeostatic device⁽⁵⁾ but does not elaborate the subject further.

In 1932 I learned from L. Andreev (per-

initiated by the drop closing the circuit activates a multivibrator that drives the integrator. Simultaneous records of the drops of saliva and the rate of flow may thus be obtained.

onal communication) that the workers in Pavlov's laboratory appreciated the significance of at least the first part of the curve and took cognizance of it in their experiments.⁷

In the quiescent state the baseline secretion is relatively uniform and the experiment in our laboratory indicates that the rate of flow from the parotid duct is from three hundredths to five hundredths (3/100 to 5/100) cc. per minute. It is well known that a high interval secretion in animals is associated with poor positive reflexes. In the "agitated" form of the experimental neurosis where central irritation is the rule, the level of interval secretion is elevated. In the inhibited type the level is depressed. It is no surprise, therefore, that we have more difficulty in demonstrating conditional reactions in patients than in non-patients. The administration of local anesthetics or atropine and conversely local irritants of philocarpine produce analogous effects. Some of the tranquilizers in large doses depress the reflexes and alter the interval secretion. In the absence of extraneous influences we may assume that a consistent departure from the "normal" salivary curve may be attributed to the internal state of the organism.

Our experience thus far indicates that a relation appears to exist between the subjective sense of well-being and the contour of the salivary curve. A change in the curve heralds a coincident change in the internal milieu. It may also be that what we interpret as anxiety corresponds at least in part with "irritation" in the conditional reflex terminology. By contrast central inhibition closely resembles depression. Inhibition may occur in conjunction with many disorders and is not necessarily characteristic of depression in the formal diagnostic sense of the term. One of the more confus-

ing combinations is the association of irritation and inhibition, which if our suggestion is correct amounts to a state of depression.

Fig. 7 shows an example of irritation combined with inhibition and the effect of a sedative. Before medication the secretion is maintained at a high level but there are marked fluctuations seen in the "normal" record. The administration of Amytal gr. 5 tended to restore the regular rhythm.

Fig. 10 demonstrates the effect of one of the new drugs. On the first day after its administration the record abruptly changed from one exhibiting irritation to the antithesis showing inhibition. The record correctly forecast that the choice of the medication was unfortunate, portending that the patient would become more depressed. This was confirmed clinically after a therapeutic trial and the drug had to be discontinued.

The prompt response of the salivary flow to a change in the emotional status was exhibited quite unexpectedly in a patient whose records had previously shown inhibition. One day the record indicated mild irritation. This sudden change prompted the experimenter to inquire if there had been a coincident change in the clinical aspect. At first he was confronted with an emphatic "no" but on pressing the inquiry found out that the morning of the test the patient had been involved in a fight and was the victor in so far as she was moved to a better ward. Following this geographic change the patient's spirits were much improved.

In general it appears that tension or anxiety gives rise to a high level baseline secretion. (Fig. 11) By contrast, depression gives a lower level secretion. (Fig. 12)

Beyond these gross analogies the salivary curve supplies little of diagnostic import to the clinician. On the other hand, even the slightest change in the internal milieu manifests itself promptly, even before the clinical evidence appears. By way of example, the incipient stage of a head cold invariably gives rise to an "irritation" record. One cannot but be impressed with the sensitivity of the method as a reflection of the internal milieu. Perhaps this very sensitivity may be the factor that militates

⁷ From a physiological standpoint it seems probable that this theory offers a satisfactory explanation, not only of this phenomenon but suggests the mechanism by which blood sugar or blood pressure levels are maintained. The only concrete substantiation of it comes from McElroy (6) who describes a similar curve in the maintenance of the enzymatic control of growth processes involving the conversion:

$$\begin{array}{ccccc} & \text{E} & & \text{E} & \\ & \text{ornithine} & \longleftrightarrow & \text{citrinine} & \longleftrightarrow & \text{arginine} \end{array}$$

against its adoption as a clinical measure.

The remarkable constancy of this curve, *other things being equal*, is striking. Nevertheless, it is also true that each record of the salivary secretion tends to be stamped with the pattern of the individual from whom it was obtained. This, of course, is not surprising in view of the fact that the EEG and other physiological phenomena also bear the mark of individuality(7). Since it is not practicable for one experimenter to investigate the conditional reflexes of more than 3 or 4 individuals at the same time, it is usually easy for him to identify those records taken from the same individual merely by inspection. This is not to say that in a large series the same could be done, because of the basic similarity in all "normal" records, in all showing central inhibitions and in all showing irritations. One subject varies from another not only with respect to his level of baseline secretion but also in his specific response to a given stimulus.

Inhibition is so easily mobilized in man that more vigilance is required in demonstrating the salivary conditional reflex than is customarily accorded to laboratory procedures. The little work that has been attempted has been reported chiefly in the early thirties by Russian and Central European workers. There are scarcely any present day references even in comparison with the motor reflex. The same complaint was voiced in 1916 by Watson(8).

SUMMARY

The method offers a most promising field of investigation for those who are prepared to invest the time and effort to learn the

technique. It seems reasonable to anticipate that a considerable saving in time could be effected, for example, in the testing of therapeutic procedures by having recourse to an objective measure rather than impressions that rely upon statistical analysis for verification. It might be mentioned that one "sputnik" is more convincing than all the statistical evidence in the world.

At least one of the more venturesome pharmaceutical companies has already taken advantage of the motor conditional reflex in rats in arriving at suggested doses for each of its new tranquilizers. It is interesting to reflect that the medical profession accept the findings of the drug manufacturers obtained by a less precise method by comparison, yet seem reluctant to explore a much more exact technique in the clinical application of the drugs themselves.

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LONGITUDINAL OBSERVATIONS OF BIOLOGICAL DEVIATIONS IN A SCHIZOPHRENIC INFANT¹

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Clinical, physiological, and hereditary studies create the impression that a constitutional predisposition to schizophrenia exists in varying degrees of severity, which then interacts with the individual's assets and the stresses to which he is exposed, to produce the many different clinical pictures of schizophrenia. A few schizophrenic children appear to have such a severe predisposition that development regresses in spite of the best family care, schooling and psychiatric treatment that are available at present. The most severely affected patients in Kanner's autistic group fall in this category. Other milder childhood schizophrenics with a pseudoneurotic or pseudopsychopathic picture, show some degree of intrinsic deviation in their development, but the degree of psychological illness which results appears to be much more responsive to family, educational and psychiatric treatment.

Studies of constitutional factors in adult schizophrenics raise objections that the biochemical disturbances which have been found may be either primary predisposing factors, or might be secondary to the prolonged anxiety or hospitalization which has already existed. However, working with schizophrenic children, Bender has pointed out that certain characteristic deviations from normal physiological and neurological development are present in their histories, often at birth (1, 2).

As a first step in investigating possible constitutional factors by prospective studies, a pilot study was begun in 1952 to determine whether biological differences which distinguished schizophrenic from non-schizophrenic children could be detected in the early development of infants.

The author examined a random sample of 16 infants in a Well Baby Clinic that

served a very deprived socio-economic population, and was therefore weighted heavily in the direction of social and psychiatric pathology. From the age of one month, the infants were studied for signs of deviate development. The data from the physical and developmental examinations were analyzed according to criteria drawn from Bender. Accordingly, vulnerability to schizophrenia was defined in terms of 1. Disturbed regulation of physiological patterns, as seen in disturbed physical growth, poor temperature control, vaso-motor instability, allergic phenomena, respiratory and gastro-intestinal difficulties, and disturbed sleep patterns; and 2. An uneven pattern of growth, characterized by unusual sequences and combinations of retardation and precocity occurring in all fields, motor, perceptual, language and social.

The infant, Peter, who showed the most severe disturbance of development and was therefore identified as the most vulnerable to schizophrenia at one month of age and subsequently, is now a schizophrenic child 5½ years old. Three other infants showed lesser developmental deviations than Peter, initially and as they grew older. These 3 children have developed psychological regression readily and have shown more anxiety than any of the 12 infants who developed more evenly. However, the 3 intermediate infants never showed the personality disorganization seen in Peter and they are not considered to be schizophrenic at this time.

Previous papers have presented the detailed clinical observations of these children and their families, the criteria used in the initial rating of vulnerability and the later diagnostic evaluations, and the genesis of the psychological manifestations observed (3, 4). The present paper will focus on several of the biological disturbances seen in the schizophrenic infant, which distinguished his early development from that of the other infants studied and from accepted norms of development.

From the beginning, Peter showed an

¹ Read at the 114th annual meeting of the American Psychiatric Association, San Francisco, Calif., May 12-16, 1958.

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unusual torporific state and poor muscle tone. He slept more than usual in his first month and moved very little. When examined at one month of age, although he was precocious in some areas, he was lethargic and inactive even when awake and showed a diminished response to sounds and light. He continued to be underactive in large muscle activity until 10-18 months of age when he became hyperactive. Although manual dexterity and strength were adequate for his age in the first year, his movements in reaching and manipulation were performed in slow motion. Only one other baby, Frank, showed a similar disturbance, but to a lesser degree. He slept excessively only for the first week and was underactive only for the first 2 months.

Other aspects of Frank's physical and psychological development were also second in severity to Peter's. The early somnolent state in these infants is reminiscent of the excessively quiet "constricted activity pattern" described by Fries (3, 6).

Peter's abnormal torporific state and lengthy muscle tonus, which were marked during the first 6 months of life, are similar to that seen in normal premature infants until they approach the gestational age of the full-term baby (7). Bender was the first to point out that the existence of such patterns in schizophrenic children represents a persistence of immaturity, "embryonic" features (2). The observations of Peter's abnormal torpor indicate that we must study further the early development of the neurophysiological mechanisms which regulate wakefulness and muscle tonus. We must study the changes in the functioning of the reticular activating system which occur during the development of normal animals and human infants, as well as in the development of schizophrenic children.

A second biological disturbance was Peter's uneven growth which differed from standard norms, from the control infants, and from usual forms of retardation and precocious development. His longitudinal development was unusual, showing both retardation and acceleration, which were most striking in the areas of posture and locomotion during the first year. He held his head up well at one month but was no longer able to lift it at 3½ months, and was

barely able to lift it again at 6 months. This aspect of development actually went into "reverse" in his early months. Control of his trunk lagged so severely between 1 and 9 months that at 9½ months he couldn't sit, and had less control of his body than a normal 5 month old. Yet right after this, development suddenly accelerated so that he was walking normally by 13 months.

The extent of this abnormal development can be seen more clearly when these data are expressed quantitatively.

Figure 1 shows the comparison between Peter's uneven motor development and the relatively even motor development of the other babies. The chronological age of the children is plotted along the horizontal axis. The level of postural-locomotor development at each examination is plotted on the vertical axis, the level being expressed as the age when these levels are "normally" achieved, according to Gesell's standards.

Representative curves of the control infants cluster about the hypothetical "normal" curve, and show relatively even development of posture and locomotion, some children developing faster than others. In contrast, the lowest curve shows Peter's very uneven postural development. This dropped to less than 50% of normal between 3 months and 10 months of age, and then sharply rose to normal by 13 months of age. One must suspect "serious retardation" in a child whose development falls below 65-75% of what is expected for his chronological age (8). The retardation in this infant was well below this critical level.

However, this abnormal postural development was quite different from the usual "slow" baby who shows relatively even retardation (8). Although Peter's motor development dropped well within the defective range by 10 months of age, in the recovery phase which followed, he gained 5 months' development during 2 months' time, showing a rate of development 2½ times as fast as the normal rate. This peculiar retardation followed by unusual acceleration indicates a disorganized postural development, with a fluctuating rate, rather than simple retardation or acceleration. These data suggest that there was a disturbance in whatever central nervous sys-

train mechanisms ordinarily regulate the timing of postural development, and normally results in orderly progression in the dimension of time.

Peter differed in other ways from babies with comparable disabilities. Figure 1 shows the contrast between Peter's abnormal postural development and the normal development of his eye-hand coordination and fine manipulation. This latter skill dipped only at 11 months, to 50% of normal, at a time when he appeared to be preoccupied with exploiting his sudden increase in postural stability. Otherwise fine coordination proceeded normally in the first year at a rate that showed him to be at average intellectual potential. The discrepancy between the furnished development of these two functions produced a picture of "scatter" in his functioning on any one examination.

The general nature of such a picture may become different aspects of development may be seen. This is pointed out in Figure 2, which shows the development of postural development.

Figure 3 compares the timing of development of eye-hand coordination with Peter's. The picture demonstrates that the overall effect shows a serious lag between the infant and normal children in eye-hand coordination. His development at one year is equivalent to 18 months.

In contrast to the lag in postural development between Peter and normal children, there is a picture of normal development in eye-hand coordination. (The center line indicates the normal postural development curve in the graph below.) During his first 8 months of life, the spread from the lowest to highest achievements on each examination was

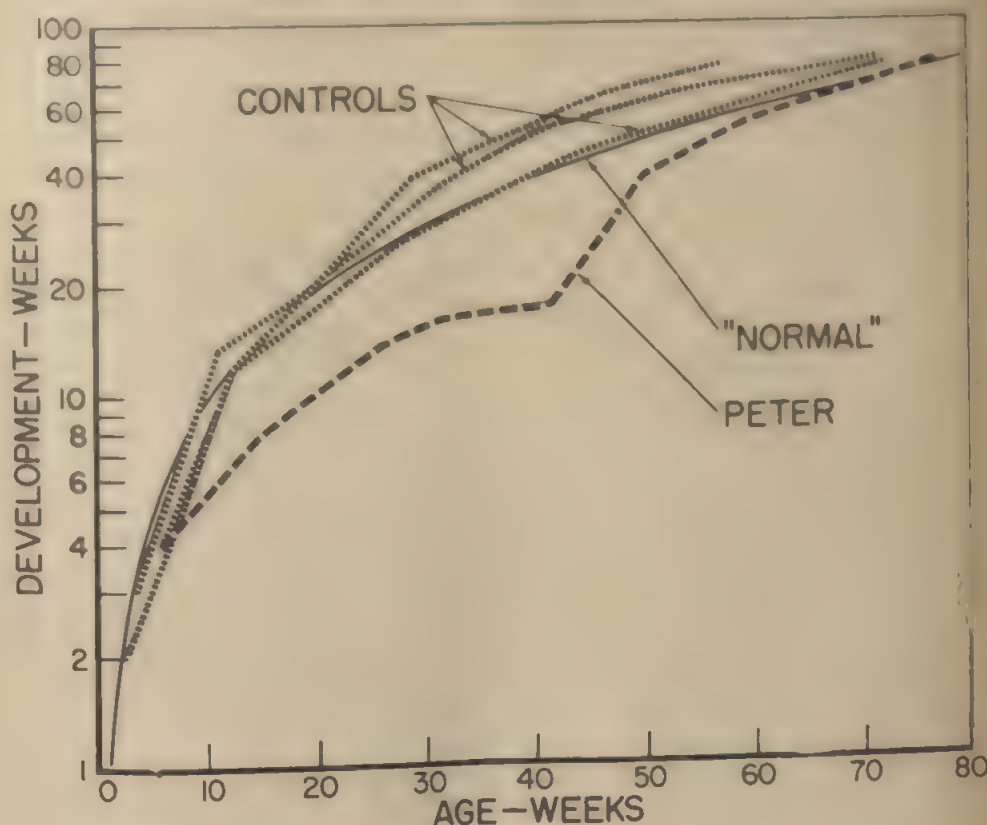


FIG. 1
COMPARISON BETWEEN POSTURAL-LOCOMOTOR DEVELOPMENT
OF SCHIZOPHRENIC CHILD (PETER) AND CONTROLS

3 to 4 months. This disorganization is comparable to a 6 year old child whose achievements range from a 1 or 2 year level, up to the 5 year level. We are familiar with this lack of integration between different functions in the psychologic performance of older schizophrenic children and in schizophrenic adults. The same disorganization was observed in the neurological development of this infant from one month of age.

The last deviation in this infant's biological development to be discussed here is the correlation between Peter's abnormal neurological development and a number of physiological disturbances.

Figure 4 shows again Peter's uneven postural development. The vertical line at 10 months indicates the age when posture lagged the most, which was followed by the rapid return to normal. It can be seen that

body growth, and growth in head circumference began to lag shortly after postural tone did so. The rate of physical growth reached its lowest point also at 10 months, and accelerated after that, paralleling the course of neurological maturation.

Autonomic disturbances coincided with the lag in physical and neurological development. The vasomotor disturbances during this period included pallor, cyanosis and mottling of peripheral origin, and dermatographia, which were worst during the period of greatest lag in growth. Gastrointestinal disturbances included spastic constipation, and both increased and decreased appetite. For the first 5 months of life, even while growth was slowing down, Peter ate voraciously. At his lowest point, at 10 months, he gave no outward signs of being hungry, although he ate well when

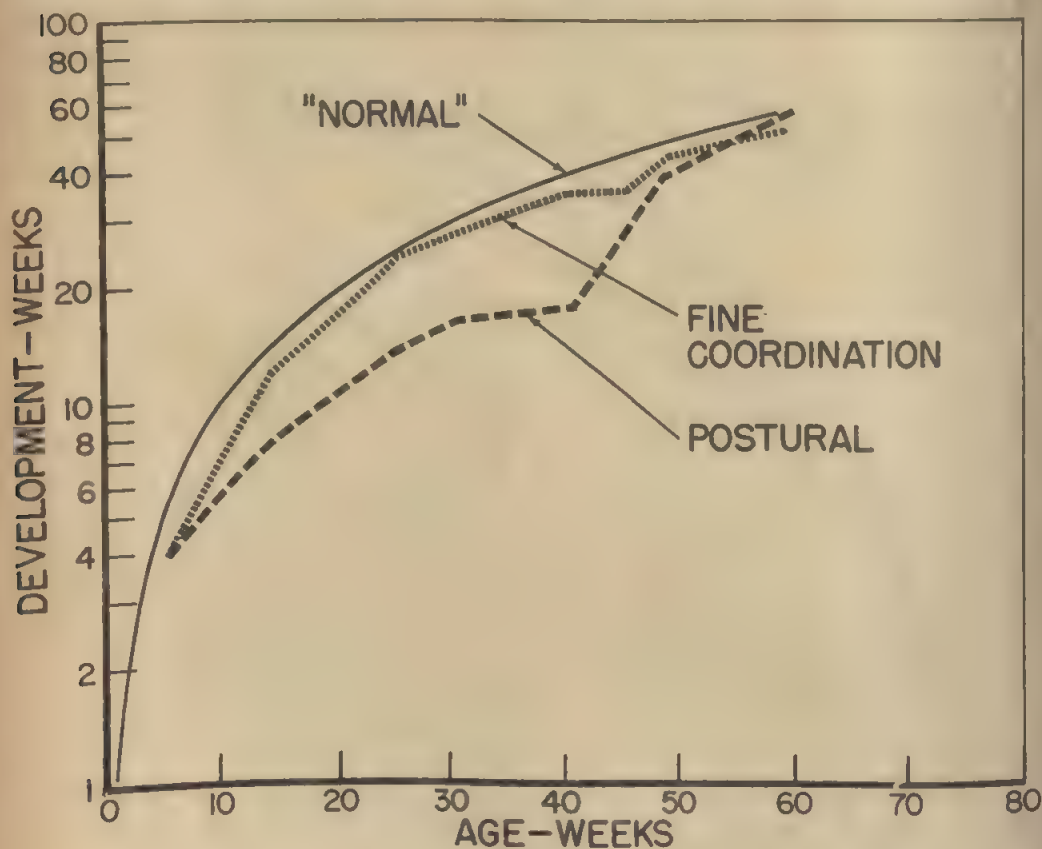


FIG. 2

CONTRAST BETWEEN ABNORMAL POSTURAL-LOCOMOTOR DEVELOPMENT AND NORMAL FINE COORDINATION OF SCHIZOPHRENIC CHILD (PETER)

fed. At this time he became unable to suck and had to be fed milk with a spoon. The period of torpor and inactivity has already been described.

Interestingly, Peter began to have a series of respiratory and ear infections just after body growth and motor development began to return to normal, during a period when he appeared to be more vigorous and in better physical shape.

The authors' earlier papers have discussed how Peter's physical symptoms evolved into his later perceptual and psychological disturbances, and how the inadequate mothering he received exaggerated both his physical handicaps and his later personality disorganization.

CONCLUSION

The longitudinal observations made on this child, who is clinically schizophrenic at 5½ years, show that the normal progress of neurological and physiological maturation

was disrupted as early as 1 month of age. Biological development differed significantly from the other infants known to the author from means of growth and development processes established in hundreds of children by Gosell and others and from the usual forms of retarded or precocious development.

The following deviations were observed:

1. The presence of an abnormal torpid state in the first months of life. 2. A severe but transient lag and disorganization in postural locomotor development. 3. Physiological disturbances which paralleled the transient neurological disturbances, including retarded physical growth and autonomic instability. These biological manifestations antedated the anxiety and psychological symptoms and appeared to be intimately related to the later clinical manifestations of schizophrenia.

A preliminary study such as this raises more questions than it answers. We plan

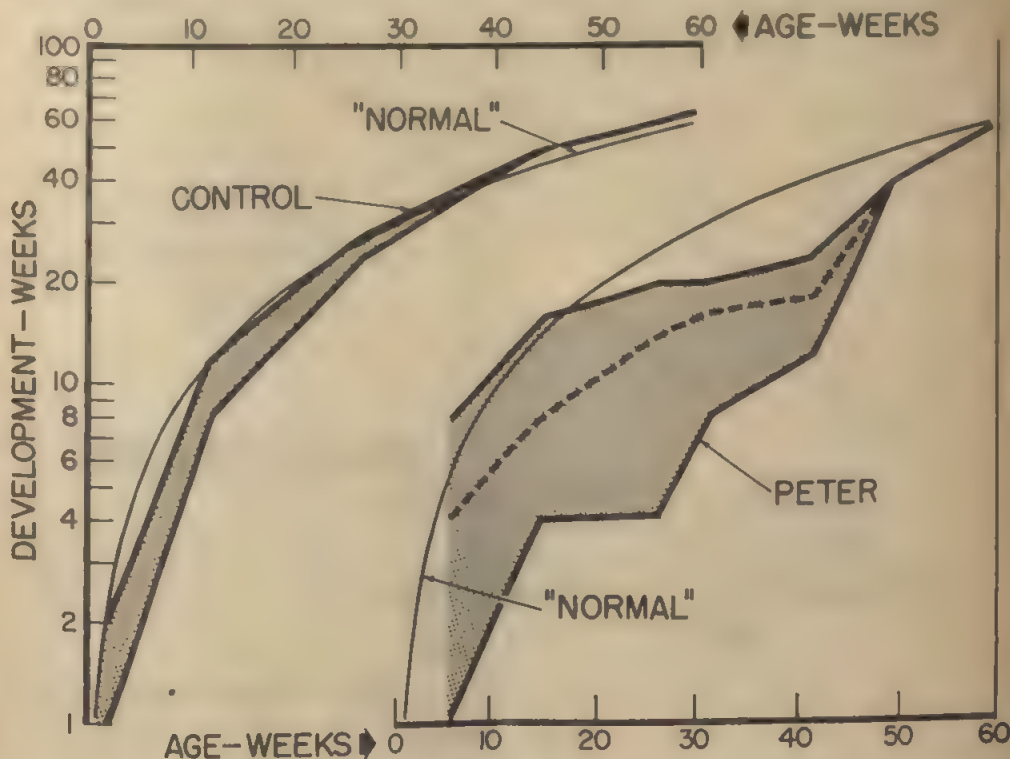


FIG. 3

COMPARISON BETWEEN SPREAD OF ACHIEVEMENTS IN POSTURAL CONTROL OF SCHIZOPHRENIC CHILD (PETER) AND CONTROL INFANT

to study a much larger number of infants to determine the critical limits beyond which erratic development may be the first sign of schizophrenia, as distinguished from the spectrum of relatively benign individual variations; and to study how different patterns of maternal care and early physiological support can modify this development.

The capacity of different individuals to maintain psychological integrity in the face of stress is often attributed to elusive qualities we summarize as ego strength. It would appear that there is a related variation in the capacity for integration in the early neurophysiological development of infants. Differences in the growing organization of alertness and muscle tonus, the progression of postural control, physical growth and autonomic stability lend them-

selves to quantitative measurement and analysis. We believe that further study of these individual differences in early neurological integration should increase our understanding of the factors making for mental health and disease.

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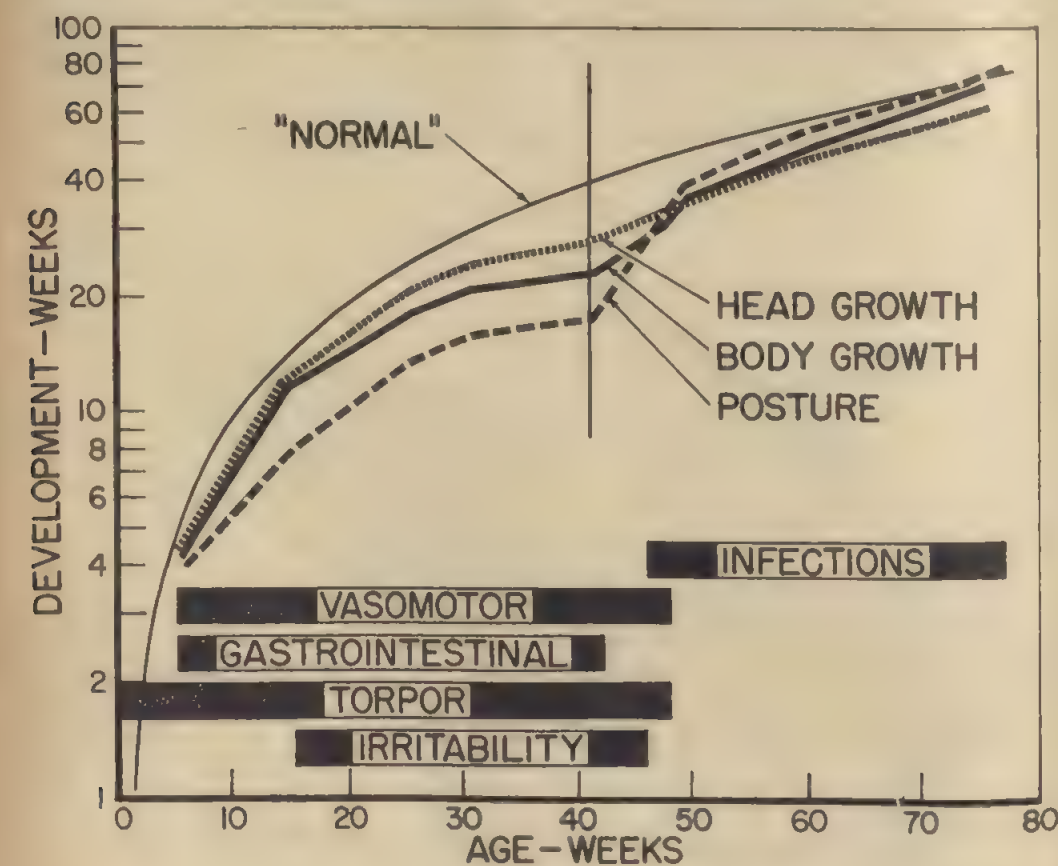


FIG. 4
RELATIONSHIP BETWEEN POSTURAL DEVELOPMENT, PHYSICAL GROWTH, AND
AUTONOMIC DISTURBANCES OF SCHIZOPHRENIC CHILD (PETER)

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LEPROSY AND PSYCHOSIS¹

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Patients at the National Leprosarium in Carville, Louisiana, show a 10% prevalence of psychosis. This prevalence, greatly increased over the frequency in the general population, has implications for a more complete understanding of both leprosy and schizophrenia.

Surveys of the prevalence of psychosis in representative United States communities vary from 5.5 to 12.5 per 1,000 people; schizophrenia occurs from 1.7 to 3.4 times per 1,000 people(1). (Figure 1)

Tuberculosis, a chronic disease similar to leprosy, shows little or no tendency to increase the rate of psychosis in the view of Kraepelin(2), Conlogue(3) and Neyman(4); however, a survey by Forster(5) shows 3 psychotics in 100 hospitalized tuberculosis patients.

Kraepelin(6) states that leprosy does not increase the occurrence of mental illness and refers to Hansen and Moreira to support this view.

Cazenavette(7) in 1927 reviewed the world literature on mental illness associated with leprosy and reported a 3% prevalence of psychosis among leprosy patients at Carville. This survey lacks a system of psychiatric diagnostic nomenclature. A re-interpretation of this detailed investigation using current psychiatric nomenclature is justified and indicates a 9% prevalence of psychosis among the 427 lepers admitted to Carville from 1923 to 1927. (Figure 2)

A census of known mental illness at the leprosarium in September 1953 listed 42 with a psychiatric diagnosis out of the 377 patients. Ten percent of all the patients at Carville were psychotic; 6.6% were schizophrenic. The diagnosis of psychosis included schizophrenic reaction, 25; chron-

ic brain syndrome, 12 (senile 11, cerebral arteriosclerosis 1); and paranoid state, 1. The nonpsychotic conditions included personality disorder, 3; and mental deficiency, 1. (Figure 3)

This census of mental illness was based on the 1950-1953 diagnostic records of the psychiatric consultation service which was reorganized in March 1950 under a Board certified psychiatrist. The entire institutional population was not examined; however, all behavioral and social problems in patients as well as organic and functional disease of the central nervous system were referred to psychiatry after March 1950. Complete psychiatric examinations were performed; standard nomenclature was used and diagnoses were usually confirmed by two psychiatrists. In addition, about 37 new admissions from 1950 through 1953 were seen in brief psychiatric screening interviews.

A few of the more disturbed psychotic lepers had been segregated for many years. A 20-bed closed psychiatric unit has been filled since it opened in 1954. An unknown number of psychotic patients who did not present medical, psychiatric or social management problems were never referred to psychiatry. Much of the patient population was Spanish speaking while the medical staff was not, so the language barrier may have acted to shield some psychotics.

Most of the schizophrenia was of long standing and the records usually did not reveal whether overt schizophrenic symptoms preceded the admission to Carville for leprosy. Nearly all the schizophrenia was of the chronic type with a thinking disturbance, blunting of affect, apathy and isolation prominent in the clinical picture. Considerable intellectual deficit was present on the psychiatric examination of most of the schizophrenics. This finding is compatible with chronic schizophrenia but may also be related to other factors: the low socio-economic and educational level of most of the patients, the effects of the physical illness and the loss of intellectual stimulation due to the isolation and stagna-

¹ Read at the 114th annual meeting of The American Psychiatric Association, San Francisco, Calif., May 12-16, 1958.

² From the Lafayette Clinic and Wayne State University College of Medicine, Detroit, Mich. These observations were made while the author was a psychiatric consultant at the U. S. Public Health Service Hospital (National Leprosarium), Carville, La., 1953-1955.

tion of institutional life. The language barrier of the many patients speaking little or no English was an obstacle in the psychiatric evaluation as well as the socialization of those patients within the institution.

The lack of diagnosed psychoneurotic reactions indicates only a relative infre-

quency of psychoneuroses. The stigma and fear attached to psychiatric referral, the unavailability of psychotherapy, as well as the reduction of anxiety by religion, work assignments and general medical management kept psychoneurotics from the psychiatrist. The absence of manic-depressive

FIGURE 1
PERCENT OF PREVALENCE OF PSYCHOSIS AND SCHIZOPHRENIA FOR POPULATION OF UNITED STATES COMPARED TO PREVALENCE AMONG LEPERS AT CARVILLE

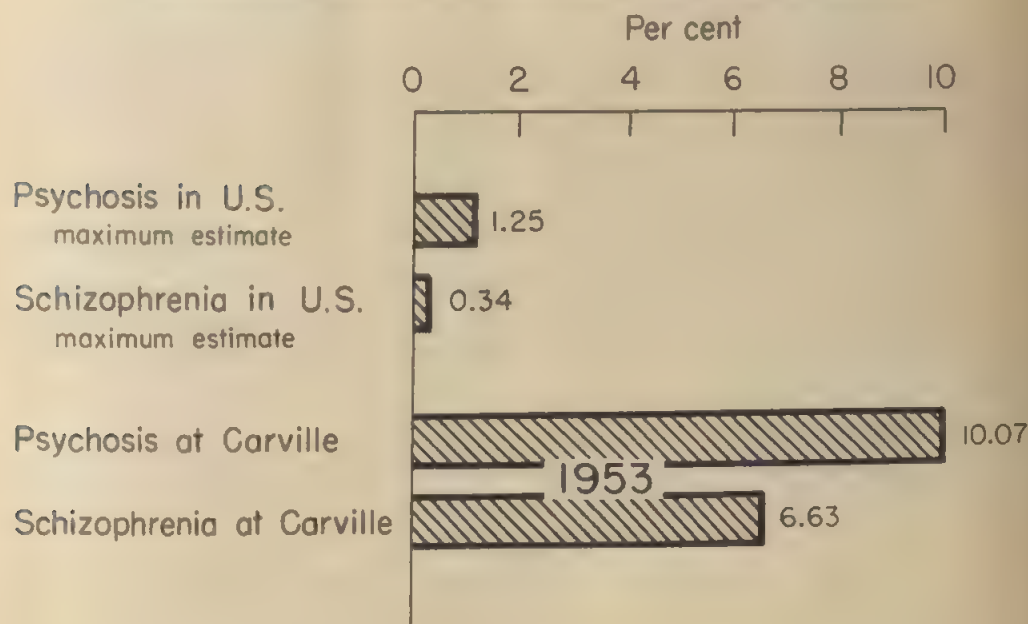
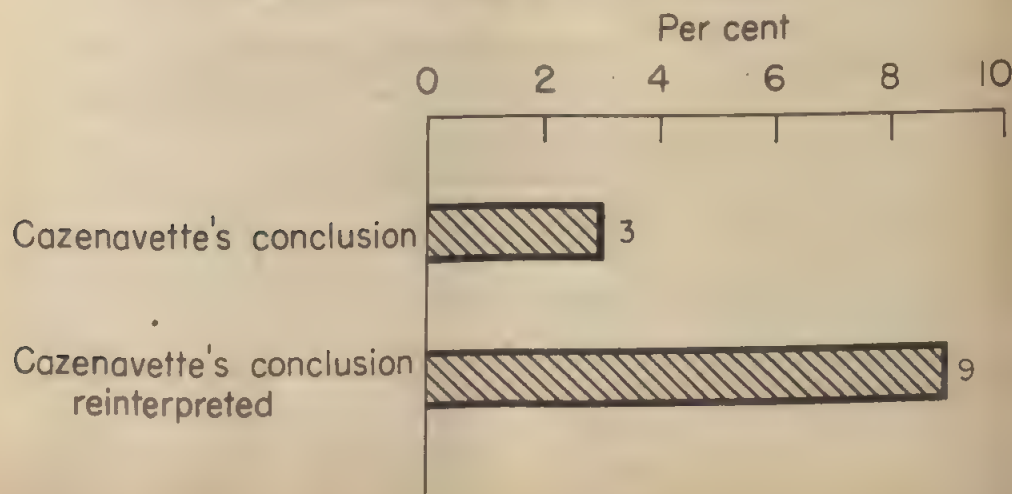


FIGURE 2
PER CENT OF PREVALENCE OF PSYCHOSIS AMONG 427 LEPERS ADMITTED TO CARVILLE 1923-1927, BASED ON PAPER BY CAZENAVETTE



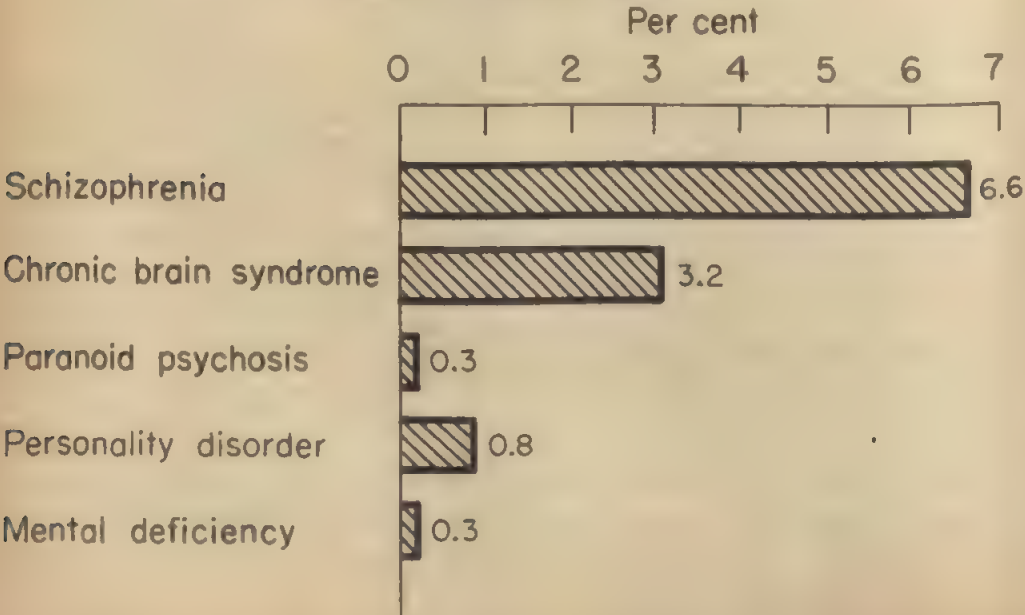
and involuntional reactions appears to be valid. The author's contacts with patients from 1953 to 1955 confirmed the rarity of manic-depressive and involuntional reactions as well as the reduction in the usual frequency of psychoneurosis.

Psychological and social factors in the Carville patients explain many of the psychotic reactions. The patient population is largely from a low socio-economic segment of the population of 5 states : New York, California, Texas, Louisiana and Florida. Leprosy is seen by many patients as lifelong exile from community, family and friends. The social stigma of leprosy is overwhelming both in fact and fantasy. Admission to Carville is often followed by a depression of mood lasting two or three months. Denial of leprosy among patients may occur on admission or during the course of institutional care. Withdrawal, guilt and the loss of self esteem due to the onus of leprosy may result in depersonalization. The common sight of a few patients without eyes, noses, ears, hands or feet due to leprosy may correspond to a psychological disturbance of body image. The emotional atmosphere of the better adjusted patients of the institution is one of passive-depend-

ent resignation with many paranoid overtones. Hope and gaiety are largely lacking. Many patients stay for their lifetime and lose all family interest and ties. A few leave without permission but most of these return voluntarily. Some patients who are considered cured are unwilling to leave because they have no place to go(10).

A program for the exploration of this problem can be formulated. The atmosphere of the leprosarium in terms of its psychosocial impact on the individual leper should be evaluated. This would require knowledge of the institutional atmosphere as well as consideration of personality types common to the patient group. Recognition of the patient subgroups based on racial, religious, language and other cultural identities is necessary, *e.g.*, the patients whose blindness is due to leprosy who live together in a "blind house," small groups of Negro and Chinese patients segregated by residence hall, the few well-educated patients of Northern European descent who are missionaries. The long-standing social barriers between patients and employees are significant. Recent successful patient activity to oust an unpopular Medical Officer in Charge is one of the few examples of

FIGURE 3
PER CENT OF PREVALENCE OF MENTAL ILLNESSES AMONG
LEPERS AT CARVILLE IN 1953



patient group integration(8, 9, 10).

Psychodynamic studies of the individual patient by means of projective techniques as well as psychotherapy should be a part of the program to understand the reaction of the total personality to leprosy. Some of the psychotic reactions as well as the behavioral and neurotic problems would be best understood by this approach to the patient.

The impact of the psyche on the leprosy process in terms of etiology, course, complications and prognosis could be studied at Carville. Leprologists have suggested that the patient's emotions play a significant role in the course and cure of leprosy(11, 12, 13, 14) as well as in the complicating allergic lepra reaction(15). It is reported that hypnosis has been used in the treatment of the depression, pain and paresthesias of leprosy in Russia with some success(16). Leprosy remains a disease with many unknown etiological factors. There are definite resemblances to Selye's diseases of adaptation(17, 18, 19, 20, 21). We know the brain-pituitary-adrenal relationship is involved in these diseases of adaptation. The complexity of the mind-body relationship in leprosy invites a vigorous, multidimensional study.

A biological affinity of schizophrenia for lepers could explain an increase of schizophrenia among them. The incidence of schizophrenia and psychosis in chronic hospitalized leprosy patients should be compared to that of first admissions as well as non-hospitalized lepers; tuberculoid and lepromatous leprosy patients may differ in type and rate of mental illness. Lepers in Asia and Africa may show a different frequency and form of psychosis from those in the United States. Both leprosy and schizophrenia may have important constitutional determinants and there might be some common factors. The significant role of bacterial, infectious, hereditary, environmental, resistance, immunological, allergic and racial factors in the etiology of leprosy suggests that some of these dimensions might be used to approach the schizophrenia-leprosy problem.

Leprosy may cause an organic, metabolic or toxic lesion of the brain. The literature on leprosy(22, 23, 24, 25, 26), including

recent autopsy studies on Carville patients(27), largely concludes that no demonstrable organic pathology of the central nervous system is associated with leprosy. However, the neurology text by Baker 28 and Serejski's 1926 case report 29 emphasize the high incidence of psychosis in lepers and the possibility of an organic brain disease associated with leprosy.

The problem of central nervous system dysfunction in leprosy should be reexplored by a program including complete neurological and psychiatric examination, cerebral fluid studies, electroencephalograms and psychological tests. This clinical evaluation of the psychotic leper should discriminate between a schizophrenic and an organic psychosis. A control group of non-psychotic lepers studied in terms of central nervous system function may be necessary. Further examination of post-mortem material may be indicated.

There are an estimated five million persons afflicted with leprosy in the world(30). "Leprosy in the United States is a definite, though not a great, public health problem," according to a 1955 survey by Badger(31). A comprehensive study of the mentally ill lepers at the U. S. Public Health Service Hospital at Carville would fill the manifest need for clinical data in order to plan psychiatric care for lepers. It would also be of genuine value in clarifying the psychophysiological aspects of leprosy.

SUMMARY

Leprosy is a unique stress with anatomic, physiologic, psychologic and social effects on the individual. Here is an opportunity to explore this stress in terms of the mental reaction. We would expect to learn much about causation of schizophrenia and psychosis in the Carville patients. Such a study also offers hope of a better understanding of the role of psychological and social factors in the origin of all schizophrenia.

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SOME PSYCHOANALYTIC IDEAS APPLIED TO ELATION AND DEPRESSION¹

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Those of you who examined the photocopy of Freud's manuscript of *Hemmung, Symptom und Angst* which was exhibited two years ago in Chicago may have noted that he emended the title. Before writing the essay, Freud appears originally to have set down the words *Hemmung und Symptom*, then later to have added the word *Angst*, transposing the *und* by means of a loop, so that it came between *Symptom* and *Angst*. This small alteration serves to indicate that during the writing, the topic of anxiety came to have equal importance with inhibition and symptom. Freud's correction was the first that the title received. The second, so far as the English translation is concerned, was made in America. Two translations were published, one in England, where it kept the literal translation of the German title, *Inhibition, Symptoms and Anxiety*. The American version omitted the words *inhibition* and *symptom*; and it bears the title, *The Problem of Anxiety*. The new name did not originate with the American translator, the late Henry Alden Bunker, but with the publisher, Mr. W. W. Norton.

These emendations have their meaning. They herald the book's effect on the thinking of the psychoanalytic world. For, looking back on the thinking and discussion which the book has provoked, we can see that its main topic is anxiety, and that along with the concept of defense this topic has received most of the attention of its readers. We can thus appreciate better the point implicit in Mr. Norton's editorial decision, for this able editor seems to have sensed prophetically the central interest of the book. Of the three nouns that make up its original title, inhibition is spoken of most rarely. Symptom, too, if one understands the argument of the book, is no longer an

elementary, prime concept, as it once was. A symptom, in the context of this book, is something not elemental, but compounded of ingredients. It is what we have come to call a structure. Into this structure go instinct and defense against instinct, and if we were to rename the book to-day, the title chosen might well be *Instinct, Defenses and Anxiety*.

These are certainly the three concepts that we apply in our dealings with such facts as are being discussed at this meeting, facts which through tradition and for convenience of communication we still refer to as symptoms and in particular as symptoms of the affective disorders. At this point we immediately run into semantics and feel the need for precise definitions. For, although we use an old word, symptom, it too, since it cannot be renamed, needs reconsideration. In our modern context, it has come to have a new meaning. When to-day we speak of symptom and apply to it the concepts of instinct, defense and anxiety, the old name is a new idea. We have to eliminate from our memory the implications of its old definition—namely, that of a sign or indication of an underlying disease. In the old sense of a sign, a symptom is an element from which conceptually we build up disease entities or more colloquially, diagnoses. Our present concept, contrariwise, makes of it a complex structure which we can take apart into simpler, antecedent, more elemental parts; and though the word remains, we are far from regarding it as a sign. Semasiology has departed from symptomatology.

That this is true is no longer a novelty. Following the teachings of Adolf Meyer, we have long since tried to abandon the idea of an "underlying disease" as an explanation of what we nevertheless still call a symptom. We know that in the affective disorders, particularly, a disease entity is a most debatable assumption and that the word symptom must be freed of the dust of its past. Our present use of the word has taken us back, in a certain sense, before our

¹ Read at the 114th annual meeting of The American Psychiatric Association, San Francisco, Calif., May 12-16, 1958.

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19th century predecessors, our progress has depended on a sort of regression, and we have recaptured some of the word's original Greek signification. The Greek word *symptoma* meant a mischance, an accident. It came from the verb *sympipto*, to fall together violently, the same verb from which we have derived the word *asymptotic*, applied in geometry to curves which do not fall together, or as we usually say, coincide. According to its etymology, therefore, a symptom was something that one fell in with and then fell together with. It was an event, and for no more than for any other event was there implied a hidden cause. It belonged to nothing; it represented nothing; it was not a sign of something else.

This point of view has been much reiterated in expositions of schizophrenia, and when into discussions of that disorder there is insinuated the 19th century idea of a "disease entity," we are by now on the alert to recognize and repudiate it. We are considerably less alert, however, when we discuss the so-called affective disorders. Here we encounter with some complacency ideas that imply an ideal entity or a causal reality behind the phenomena. True, this *ens* is no longer called the disease process nor is it supposed to have independent existence. But the assumption of such an existence is often present, wrapped up and concealed in an innocent-seeming, new phrase. The phrase is: the underlying depression. This putative underlying depression is then invested with attributes proper to a causal underlying disease process. It is thought of as something behind the manifest facts and granted a causal role.

This mode of thinking comes to our attention often in discussions of hypomania or elation. One hears and reads that beneath every elation there is an underlying depression. Usually the statement is meant to be descriptive. It intends to imply no more than the fact that a depression makes its appearance after some elations have subsided. If this empirical fact were so stated, there would be no difficulty. We should then understand that there were two events—a state of elation and a state of depression—and there would be no tacit statement that one caused the other.

But more often such a tacit causal relation is exactly the implication. Many would reject the idea that they mean to speak of a disease entity, vaguely understood by the phrase in question that two opposite states of mind exist in one person—that there are as if a conscious elation and a concurrent unconscious depression. Such a remark has one of two meanings, depending on whether it refers to the affects of elation and depression; that is, the joy and the sadness; or whether it envisages the psychic structures which go by the same names, and which in the old psychiatry were called symptom-complexes. In either case there is difficulty. The concept of an unconscious affect of depression is not an agreeable one to psychoanalytic theory, which has had trouble enough with the idea of "unconscious anxiety." If the statement refers to an unconscious symptomatic structure, the situation is equally uninviting. We should then be confronted by a strange theoretical situation. There would be two simultaneous formations involving the same parts of the total personality in diametrically contradictory ways. The situation is theoretically inadmissible. For, in the elated symptom the ego would be unified with its superego, while at the same time in its concurrent unconscious depression, the same ego would be completely at odds and separated from the same superego. We should run into a personality structure to which an ordinary "double personality" by comparison would be simple indeed. Conceptually, the easy Copernican system of interacting id, ego and superego would be replaced by a Ptolemaic system of egos involved with ids and superegos in ever more complex topographic cycles and epicycles. The idea of an "underlying depression," at first sight so innocuously simple, would be revealed as extraordinarily complex, as masked in a specious simplicity.

The idea of an underlying depression is equally delusive as an explanation of the instinctual situation. Again it leads to paradox and contradiction. While a triumphant mania is proceeding with all sorts of externalizations of energy, by inference there would be at the same time an underlying inhibition and inward direction of aggres-

sion. Another tacit implication of the phrase is a genetic one. It assumes that a manifest elation, if analyzed and properly interpreted, will be revealed as a present-day reaction against an original, primal, infantile depression. The underlying depression, in this loose usage, is not a present bad situation to which one has a double or two-layered reaction, but let us say a manifest elation covering a repressed original depression. This explanation then rests as it were with an original infantile depression, and not instinct, defense and anxiety as the ultimate genetic basis of the current elation.

Let us return to Freud and *The Problem of Anxiety*, and to the elements he uses in that book to build up a symptom, conceptually speaking. An elation, according to this scheme, is a symptom. Into the symptom of elation enter defenses from the ego that are due to pressures from the id, the superego, and the real environment. The instincts and the defensive measures in the elation are familiar to us and need no repetition beyond the naming: the instincts called oral, the defenses called identification and denial. The active mania in its denying function is a great flight from the dangers threatened by the oral id impulses, and these dangers determine the content of the anxieties that are discovered in the elation. The anxieties are expressed in oral language; they are fears of being eaten, of starving, of being put to sleep (killed), of being separated, and the rest. This picture is not complete, but it indicates what is meant by the formulation of the elated state in terms of the elements of *The Problem of Anxiety*. It relates the psychoanalytic findings (not merely the superficial observations) of the elations to the instincts, to defenses and to anxiety. It involves no reference to a depression, which has its own pattern for handling the oral conflict.

It may be asked, what then is the relation of depression and mania? If one can formulate them separately without taking the other into account, what is it that they have to do with each other? Is it not true that the empirical clinical findings demand a postulation of some sort of relation between them? If then we are asked on the basis of

a theory to give them separate structural, instinctual and genetic consideration, are we not going too far and discarding too many evident facts that show them to be two parts of common clinical pictures, those which determined the names "affective psychoses" and "manic-depressive"? In the interest of maintaining a theory, must we abolish the significance of the hyphen between the two words, *manic* and *depressive*?

The answer obviously is that we cannot abolish the hyphen. We are compelled to state a relationship between the two affective conditions, and in fact such an answer has been made. It states that a mania is a regression, genetically speaking, which goes back to an earlier condition than the regression which characterizes the depression. The ego in mania is not denying a depression; it is denying death and the fear of dying by a declaration of invulnerability and immortality. The false happiness is a statement of world-mastery such as was enjoyed by the earliest "pleasure-ego" before the establishment of the reality principle.

According to this formulation, the hyphen does not mean *because of*. It does not mean: because of depression, therefore mania; nor alternatively, because of mania, therefore depression. Under the Kraepelinian regime, it did not have this meaning either. Then it simply meant *and*: mania and depression were two aspects of the presumptive underlying disease process. To us, the hyphen cannot have this implication, and the best interpretation is surely *or*. Mania *or* depression, we say, may arise or may be formed according to the particular regressive defenses selected by the ego to meet the inner conflict between instinct, superego, and reality.

A great deal more can be said on the score of this regression, and indeed a great deal has been said in the literature of the past few years, which it would be distracting to review at this point. Here I think it would be more appropriate to clarify the relation between the elation and the depression, as well as to explain the *or*-hyphen relationship by a procedure which has often demonstrated its value. I mean that we seek for clarity by turning to the study of

dreams. In this context, the analogue of the elated state is what Freud has called the "happy dream."

For example, the dreamer visited a dying friend the day before the dream. He dreamed of his sick friend, in "the pink of health," stalking through the room, dressed in evening clothes, his face aglow. How wonderful he looked! The dreamer woke up roaring with laughter. All such laughter is macabre—and such dreams too. They deal, Freud stated in *The Interpretation of Dreams*, with thoughts of the dreamer's death. What a store of clinical wisdom is gathered into that book! A dream such as this will clarify the affective details of the elated state. The laughter is meant of course to divert attention from the fear of death; and roughly, this is what an elation is for. In such a dream there is no underlying depression; there is an "underlying" and distortedly manifest fear of dying. The laughter does not serve as a screen to cover "depression." It is a pre-mourning, pre-melancholia laugh: "Ha ha! He will die, not me!" The laughter is a "screen-affect"; but the other affect that it masks and supplants is anxiety. The dream-work takes the sleeper back to a period in which he knew no death. The screening is a regression to a time when the idea of dying had not arisen, certainly not in connection with one's self.

This brings up the topic of screen-affects, a phrase for which I am afraid I am partly responsible. This phrase has been understood again to mean that a happy mood may exist superimposed over a concurrent, or latent, depressive one. This is not what I meant when I introduced these words, which I used by analogy with "screen memory." I specifically referred in my original discussion (in *The Psychoanalysis of Elation*) to the regressive aspects of screen memories, and I suggested that the affect which arose whether in dreams, in free association on the couch, or in the elated states, might be displaced in time. It was thus intended to point to the latent content, and shared with the concept of screen memory the quality of referring to a different "real" occasion. I now think I might have referred more simply to a "displacement in time," but in my original ex-

position I was concerned not only with the screening function of the mood but also with the sense of reality. For an explanation of both I utilized appropriate discussions in *The Interpretation of Dreams*.

Looking back on the development of the psychoanalytic theory of the depressions and elations with the purpose of finding out why so alien a concept as the "underlying depression" can still affect us, we come upon the idea that this underlying depression may be a somewhat altered version of what Abraham called the "primal depression," or the infantile prototype of a "melancholic depression." In Abraham's famous case, the recurrent depressions were found to be repetitions of the patient's frame of mind after he had witnessed involuntarily the coitus of his parents. Melanie Klein has expanded and modified the idea of the infantile prototype and has postulated a "depressive position" in infantile development, which is then followed by a "defensive manic position." Abraham too went further in his formulations and suggested that manic attacks without preceding depressions in adult life might be sequels of infantile depression, the belated tail-end, as it were, of a manic-depressive sequence. Abraham was cautious, however, in putting forward this proposition and stated that he had no clinical material to bear him out.

In my opinion, both Abraham and Klein have put the cart before the horse genetically when they see mania as an after-effect of depression, whether as the running of a course or as an ensuing defensive reaction. My alternate assumption is that in infantile development the prototype of elation, which would be oral satiety and union at the breast (Rado), precedes any infantile or adult depressive manifestations. I trust that this point of view was made sufficiently clear in my previous writings.

Another use to which the idea of an underlying depression has been put is in the explanation of some types of delinquency. The idea has been propounded that the delinquent of this particular type engages in asocial actions to take flight from an underlying depression. As a very special, partial and isolated working idea, this point has apparently been of value. I have had

no therapeutic experience with the age group about which such statements are usually made, but I have been fortunate enough to hear case presentations at conferences in the psychoanalytic institutes. In such cases, it seems to me, the idea of an underlying depression may have been introduced because the patient's behavior was of the hypomanic, driven sort; but in the same cases, the acting out seemed to mask not depression but fears of dying and impulses to die. From my present standpoint, a formulation in terms of the psychoanalytic theories of the affective states—that is, in terms of instinct, defense, and anxiety—would in the end be more fruitful and more consistent than one which depended on the concept of an underlying depression. It should not be difficult to make the necessary conceptual corrections.

If we were discussing other disorders than the affective psychoses, we should all be clearer concerning our basic concepts. Since the writings of Bleuler and Adolf Meyer, this is certainly true for schizophrenia. And if we took the same attitude towards the affective states that we do towards the neuroses, we should also free ourselves from the dust of the 19th century. For example, a patient entered the psychiatric ward unable to speak, stand or walk; the diagnosis was conversion hysteria, aphonia, astasia-abasia. After some therapeutic handling she spoke, stood and walked. She no longer had a conversion hysteria. But she was obsessed with various unpleasant thoughts and she found herself forced to count such items as the cracks in the furniture, the pleats in the curtains and the like.

I saw the patient in question some 35 years ago. Already psychiatry was too sophisticated to think that anything was accomplished by a change in the "diagnosis." The simple statement was made that after the hysteria cleared up, the patient developed an obsessional-compulsive condition. Neither underlay the other, nor did one cause the other. To this statement of the case, we need only add that one set of defenses superseded another, that a new regression had been made, and that in consequence new symptoms based on different instincts and defenses made their appear-

ance. This would coincide with Freud's concept of the etiology of the obsessional neurosis.

In a comparable matter, if we accept Abraham's finding that between depressive attacks patients often show obsessional symptoms (and one might add that others are phobic and still others beset by somatic, mild conversion symptoms), we still need not think of such symptoms as "warding off a depression." They could be conceived as different ways of meeting an inner conflict at different levels of regression and with different defenses. A psychoanalytically conceived person, the psychoanalytic "model," calls into activity various defenses and meets the instincts at various levels of regression. He, or "it," does not carry about within a formed underlying mania, a formed underlying hysteria or obsessional neurosis. We cannot logically reify the "possibility" or "potentiality," diathesis or what-not, for forming them. The elements of the psychoanalytic model are the instincts and ego functions, and the topography of psychoanalytic man is the id, ego and superego.

Hence and finally, I should like to propose caution in the use of another familiar idea taken from the older psychiatry; namely, the depressive equivalent. As this term is employed, it suggests that an anticipated depression has not appeared but instead a given set of somatic or other symptoms. For description there may be no harm in the term, but as a basic concept it shares some of the disadvantages outlined in discussing the concept of the underlying depression, and it threatens to confuse our ideas of etiology by introducing alien frames of reference.

SUMMARY

Looking back over this exposition, I see that from first to last I have been overtly or tacitly concerned with the meaning of words, which some may think an unimportant matter. I should disagree with any such opinion. When Freud explained what he meant by the statement, "The hysteric suffers from reminiscences," he chose an allegory that depended on philology. A hysteric, he explained, was like a modern Englishman who wept every time he passed

Charing Cross, etymologically *where the cross*, so named because at this spot the funeral procession of Queen Eleanor stopped on its way from London to Westminster in the year 1204 and a cross was erected to mark the halt.

Let us not suffer from reminiscences. Even if we transiently must accept the vocabulary of our ancestors and if we speak

of manic-depressive states, of depressions, or of depressions, let us at least be aware that we are in the 20th century, that time separates us from the burial of the dear Queen and from the originators of the old terminology. A quiet tea may be in order, but it should not blind us to the busy modern traffic.

THERAPEUTIC FACTORS IN ALCOHOLICS ANONYMOUS¹

HERBERT S. RIPLEY, M. D. AND JOAN K. JACKSON, Ph.D.²

Alcoholics Anonymous has been in existence since 1936. Even in the absence of statistics on recovery rates, it is known that many benefit from association with Alcoholics Anonymous. Yet there have been few attempts to analyze the treatment process in order to specify its therapeutic ingredients. Simmel(3) interprets the essential therapeutic factor of A.A. as a reinforcement of the superego through prohibition and a spiritual experience which acts to undo wrongs and resolve guilt. Stewart(4) emphasizes fellowship with empathy and the acknowledgement of a greater power. Hayman(2) points out that with therapy the patient will discover the power of choice and will choose not to be an alcoholic. This is in keeping with Freud's formulation that the aim of psychoanalysis is to give the patient the ability to choose one way rather than another(1). Trice(5) discusses the significance, the readiness and the capacity to affiliate with A.A.

On the surface, Alcoholics Anonymous is a federation of autonomous but loosely organized groups of alcoholics who are learning to live without alcohol. The members believe that sobriety can be achieved and maintained by associating with one another, by sharing their common problems, by trying to help other alcoholics to recover and by following a program called "The Twelve Suggested Steps."

The Twelve Steps are a series of statements which purport to describe what successful members have had to do to remain sober. The Steps are considered as guideposts for the alcoholic to reorganize his life. The content of these Steps can be summarized briefly: 1. Accepting oneself

as an alcoholic, *i.e.*, as unable to drink in a controlled fashion because of physiological and emotional pathology; 2. Being willing to change one's personality, relationships and way of life in a manner conducive to healthier adjustment; 3. Accepting spiritual help from a self-defined God and His guidance in day to day living; 4. Taking an honest and continuing "personal inventory," *i.e.*, an assessment of one's self and of one's relationships; 5. Taking action to change dysfunctional personality attributes and behavior as they are recognized; and 6. Helping other alcoholics to recover.

There are also the "Twelve Traditions," a series of rules governing the behavior of A.A. groups and of individuals as A.A. members in relation to outsiders. The Traditions make it clear that A.A. permits the achievement of only one goal, that of directly helping the individual to maintain his own sobriety. They specify that A.A. will not get involved in any other type of activity and that members will use A.A. solely for achieving and maintaining sobriety.

Other explicit elements of the A.A. program include being honest with oneself and others, attempting only what is possible and thinking through all problems before taking action. In addition, A.A. members are expected to place sobriety ahead of all other goals and relationships because without sobriety, nothing is achievable.

When A.A. is observed in operation over a period of time, it becomes apparent that there are many therapeutic aspects which do not appear on the surface and which are never made explicit by members. The organization's structure and functioning have evolved to the point where they provide a consistent, integrated therapeutic milieu which is tailored to the treatment needs of alcoholics. It provides forms of emergency psychiatric care, group psychotherapy and individual psychotherapy. A.A. makes use of the active alcoholic's patterns of behavior, relationships, thought processes and orientation to life. It retains these but

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manipulates them toward the goal of sobriety.

This overall plan for dealing with the problems of the alcoholic does not preclude the use of social agency or professional help. For example, some members are encouraged to seek help from professional psychotherapists. In turn, psychiatrists may refer alcoholic patients to A.A. (2) because they feel that A.A. membership may supplement or complement the work of the therapist.

A.A. uses emergency treatment methods extensively and in a manner very similar to traditional emergency psychiatric care. The organization accepts the fact that alcoholics feel rejected if their needs are not met immediately. It provides emergency attention whenever it is called upon to do so. Being a large group, it can meet these needs in a way that would be impossible for individual psychiatrists. Whereas a person seeking psychiatric help would make an appointment to see a psychiatrist, the candidate for A.A. is seen immediately on demand. He will receive just as prompt a response the twelfth time he asks for help as he did the first time. A psychiatrist would consider it undesirable to be routed out of bed at two o'clock in the morning but A.A. expects this. A.A. believes that it is only common sense for the new member to call his sponsor whenever he is needed, regardless of the hour. In most large cities the candidate can attend an A.A. meeting at almost any hour of the day or night or can become involved in an impromptu meeting at one of the many clubs. This is in contrast to usual group therapy experience, which occurs only at scheduled intervals.

The majority of A.A. members entered the organization as a result of a decision made when aid was sought in an emergency. When an alcoholic first seeks help from A.A., he is usually trying to sober up after a long "bender." His self-esteem is at a low ebb. He feels guilty, ashamed, depressed, anxious, tremulous and helpless. As a rule this is only one of numerous periods during which he has felt desperate and has been willing, temporarily, to consider the possibility of change. As in these earlier periods, he is ambivalent about changing and about accepting help. He mobilizes

his resistances but at the same time calls A.A. on the off-chance that they offer a way out.

The initial contact with A.A. is similar in principle to the initial interview of any psychiatric patient but different in some of its mechanics. A.A. recognizes that a crisis exists and sends out two of its members immediately, before the alcoholic has had a chance to rebuild his defenses. The emergency team devotes its energies to establishing rapport, to providing emotional support, to helping the new client to define the nature and extent of the problem and to helping him decide on a course of action once the alternatives are clear to him. The atmosphere is permissive, accepting and unemotional. The means used are the personal stories of the A.A. callers, which include statements about their own ambivalences at the outset of membership and how these were resolved. The client is told enough to permit him to accept his callers as alcoholics whose problems were equivalent to his own at one time. He can identify with them. He is told enough about their alcoholic behavior that he can feel that his own actions are not particularly unique, reprehensible or hopeless. He is given an opportunity to discuss his problems, his doubts and his resistances in a matter-of-fact atmosphere. His callers agree with him that a problem exists. They avoid being drawn into his feelings about himself, his rationalizations, or his searching for causes. Their attitude is rather that a problem exists whether or not the rationalizations and putative causes are valid. The relevant question is, "What are you going to do about the problem now?" The two callers outline the way A.A. operated in their experiences. They discuss the alternatives to A.A. They make it clear that he is free to try the alternatives if he chooses, but they convey a lack of optimism about all "will power," "control of drinking" and magic pill methods.

At the end of the visit, the alcoholic is left with information on how to reestablish contact with his callers if this should be his decision. He is told that he alone can decide what to do, that he alone can do it, that the recovery process is long, often painful, and will involve extremely hard work,

but that if he is well motivated it can succeed. The obvious fact that his callers have been sober and became sober in A.A. serves as a powerful inducement to try the A.A. program.

The sponsor-new member relationship most closely approximates the psychiatrist-patient relationship. Usually the new member selects as his sponsor one of the two members who made the emergency call. The sponsor serves to bridge the gap between the isolation of alcoholism and full membership in A.A.

This is the closest relationship A.A. has to offer. It is potentially the most conflict-engendering relationship. However, the organization has structured the relationship so as to minimize difficulties. The sponsor undertakes this relationship voluntarily because he believes that the effort to help another alcoholic ensures his own sobriety, whether or not the effort succeeds. He plays the role of the older, experienced male who can provide emotional support, understanding and guidance. He helps the new member to clarify his own thinking and to persist toward his goal of sobriety. The new member has no obligation toward him and can terminate the relationship at will. The initiate chooses his sponsor, and it is quite within the expectations of the organization that a man will have several sponsors before he himself undertakes the sponsorship role.

At first the sponsor meets all demands which fall within A.A.'s scope. A.A. will help the alcoholic think through any problems but will not solve them for him or make any attempt to change circumstances for him. It emphasizes that circumstances were not relevant to excessive drinking and they are no more relevant to sobriety. Gradually the sponsor shifts the alcoholic's problems to the group for their resolution or analysis.

In this interaction the new member has an opportunity to work out some of his problems with close relationships. The sponsor engenders admiration and becomes a figure for identification. He is chosen because of his ability to communicate his experiences meaningfully to the new member and because he can help him to work his problems through, to make decisions

and to take action on the decisions. Yet the sponsor makes no demands. His own needs are met through helping another alcoholic who has chosen him and because his prestige in his group is enhanced. In this milieu, the initiate is able to see many of his interpersonal difficulties in a new light. When the new member in his turn becomes a sponsor, he has an opportunity to work out even more of these problems.

Group therapy in A.A. takes many forms. The major types of group meetings are: 1. those open to the general public; 2. those open to select non-alcoholics; 3. closed meetings for members of A.A. only; and 4. study group meetings. A.A. considers its group activities to be the major therapeutic instrument. The group acts as a kind of family which helps the "baby," as the new member is often called, to learn how to live a normal life, to form healthy relationships with others and to arrive at a more realistic and satisfying self-conception.

Most members begin by visiting all the types of groups until they find one in which they feel at home. Groups cannot refuse to accept a member, nor can they ask one who is uncongenial or disruptive to leave the group. However, it is regarded as common sense that any member who feels uncomfortable in any group will leave it and look for one which is more congenial.

The feelings which members express about the group they select as their own are those which usually refer to families. This home group tends to be more permissive than most families. There is no formal authority structure, the only authority being derived from prestige due to maintained sobriety and the ability to help others to resolve their problems. These home groups tend to be cohesive and loyal, which diminishes anxiety and enhances self-esteem. The suggestive effect of the implantation of the theories of the group can be a potent therapeutic force.

The meetings of these home groups are usually open only to A.A. members. As a rule the members are seated informally around a table. They often drink coffee or soft drinks throughout the meeting. All problems are discussed as openly and honestly as possible. The group earnestly attempts to formulate the problem in a man-

ner which permits resolution. There are no tabooed subjects and none which is considered insignificant or overwhelming. Members think of the groups as problem-solving groups, and the emphasis remains on the aspects of the problem which are relevant to its solution. Gradually the new member incorporates the A.A. norms and patterns of thought about problems. Through the sharing of his conflicts, the burden of guilt is attenuated by being partly shifted to the group.

Study Group meetings are designed primarily for the new member. Those attending sit at 12 tables, one for each of the 12 steps. The new member can sit at any table he wishes and stay at that table until he feels he has thoroughly worked through the problems associated with it. Senior members attend and act as informal group leaders or as consultants. The Study Group provides the new member with an opportunity to study the program of A.A. systematically. It also provides a home base until the member has selected a home group and until his relationship with his sponsor becomes stabilized.

Open meetings, *i.e.*, those which the public can attend, are primarily for information and education. Speakers follow a set formula in their talks, conveying enough about their alcoholic lives to permit them to be identified as alcoholics, enough about the situation which brought them to A.A. to permit identification by any potential new member in the audience and enough about what happened to them in A.A. and how they feel now to indicate that they are en route to recovery. The talks also indicate that alcoholism can be accepted and that the past can be integrated into the present comfortably. Open meetings provide a milieu within which an alcoholic can make his first contact without in any way committing himself.

Coffee is served after all meetings. The groups break up into smaller groups where discussions continue, often at an even more intense and personal level than before. The setting is the familiar one of sitting around a table talking with alcoholics over a drink, but the content of the drink and of the talk has changed. The emphasis has been altered from a drink-centered situation to a

people-and-relation-ship centered one. The bemoaning problems to attempting to deal effectively with them. The emphasis is on assets and their utilization. Personal shortcomings and environmental liabilities are minimized.

A.A. has retained some aspects of the alcoholic's ways of relating to people, modes of life and thought processes and has channeled these toward the new goal of sobriety. The program and the group activities provide a consistent and integrated milieu. There is agreement on the nature of the illness of alcoholism. Anyone who disagrees is invited to go out and drink and prove the A.A. definition of alcoholism to be wrong. Alcoholism is thought to be a physiological "allergy" coupled with severe emotional problems. Although the use of the term "allergy" is not the conventional medical one, it implies a deep-seated difference of a physiologic or characterologic nature. This concept serves to alleviate guilt over the condition in which the alcoholic finds himself by explaining it in part on a basis over which he has no control.

The problem then is to work through the self-deceptions which permit a person to trick himself into believing that he can drink in a normal fashion. Some of the elements of his emotional problems are defined as dishonesty with himself and others, the conviction of omnipotence, impulsivity, guilt and shame, inability to enter into relationships which are mutually rewarding and obligating, making excessive demands, projecting blame to the environment and circumstances, manipulation of others, anxiety, depression, fear and perfectionism.

The milieu is structured so that the problems of the alcoholic are made apparent even to him. No demands are made on the individual. He is left in command of his decisions, his choice of groups, the degree of his participation and the extent to which he will accept responsibility for the welfare of the group. The organization has explicit ways of resolving anxiety, guilt, insecurities and fear. It is permissive, cliché-filled and religiously oriented, and relies on implicit social pressures to bring about conformity. It rewards acceptable behavior rather than punishing the unacceptable. It substitutes the satisfactions of warm, ac-

cepting and rewarding interpersonal relationships for the satisfactions and isolations of the bottle. A.A. avoids mobilizing the defenses alcoholics have built up against efforts to legislate their behavior, which in the past served only to increase their identification with other alcoholics and their commitment to an alcoholic way of life. Informal pressures for acceptable behavior become compelling as the alcoholic becomes integrated into a group with which he identifies strongly and whose members agree on all the major dimensions of his problem and its resolution. The alcoholic begins by emulating the behavior of now-sober alcoholics because he believes that therein lies the key to his own sobriety. Later he incorporates the new standards because they have brought not only sobriety but emotional rewards.

In A.A. the alcoholic does not meet such barriers to recovery as his mistrust of non-drinkers and moderate drinkers, his feelings of inferiority in relation to them, his convictions that they cannot understand him, his inability to communicate with them and the very precarious nature of his relationships with them. In contrast, the non-drinkers in A.A. are alcoholics like himself and by definition, understanding and equal. He has communicated only with alcoholics for years and this holds no terrors, especially when the settings, the terminology and the manner in which communications take place are those to which he was accustomed as an active alcoholic. Whereas previous attempts to communicate feelings to non-alcoholics, including physicians, have been impeded by the necessity of clarifying vocabulary and explaining situations, group attitudes, behavior and reactions, these now are taken as understood and communication can flow smoothly beyond this.

Another barrier to recovery has been the idealization of drinking after a period of sobriety. One of the ways in which A.A. combats this tendency can be used as an example of the way in which this organization combats other "typically alcoholic" difficulties. When an alcoholic calls for help, two members make what is called a "Twelfth Step Call." These men have been sober for a minimum of 6 months to a year,

one of them usually much longer. Calling on the new candidate, they are able to see themselves as they were. To communicate effectively with him, they must relive their own feelings when they called for help and their own experiences in A.A. In stressing to the new man that he has a choice about his way of life, they renew their own choice. Alcoholism is turned into an asset instead of remaining a source of shame and guilt. Without having been alcoholics, they could not be helping another alcoholic to recover. These calls are prescribed for the man who feels that his own sobriety is wavering.

Space does not permit an extensive analysis of the therapeutic aspects of Alcoholics Anonymous. However, anyone who observes A.A. in operation over a period will note that many of the concepts and techniques used in contemporary psychotherapies are also used by A. A. These are not conceptualized and they are not used rationally and self-consciously. They have been adapted to the treatment demands of the specific illness which they are intended to alleviate. Among these techniques used are free expression or ventilation of feelings, transference and counter-transference relationships, reassurance and emotional support, explanation and re-education, suggestion and personality analysis with varying degrees of accompanying insight.

Groups are structured so as to permit the release of inhibitions and the free expression of conflicts and feelings. Conflicts can be acted out without threatening the unity and cohesiveness of the group or endangering the new member's relationship to it. Subtle social pressures operate to bring internal conflicts into group discussions. Many emotional needs are met immediately; the satisfactions of others are delayed. Substitutes are provided for some; others are blocked firmly and consistently. The groups place high value on honest and complete expression of feelings and encourage the individual to work out his own standards and patterns of behavior and to develop his own unique sense of identity as a sober person.

In addition to the elements shared with the psychotherapies, A.A. uses alcoholic patterns of thought, relationships and

values and manipulates them toward the new goal of sobriety. Later when the member is healthier it encourages him to change these also. In tailoring a milieu to fit only alcoholics' treatment needs and in serving only one goal, Alcoholics Anonymous is unique.

SUMMARY

The concepts, philosophy and techniques used by Alcoholics Anonymous have been described and discussed. Many of the techniques of individual and group psychotherapy are employed. In addition there is emphasis on the ready availability of emergency attention and the development of permissive, warm and emotionally rewarding relationships with others who have a similar problem.

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DISCUSSION

FREDERICK F. BOYES, M. D. (San Francisco, Calif.)—There seems to be general agreement that the success of Alcoholics Anonymous is a modern miracle; however, this should not mean that there is no further room for growth or improvement. Also, since this program is operated by human beings, and often rather sick ones at that, there are bound to be the usual human problems in translating theory and policy into practice. For instance, there are many different ways in which the 12 step caller approaches the person asking for A.A. help. One worker may completely identify with the applicant and may go so far as to supply additional liquor to ease the withdrawal symptoms and help the applicant taper off. Another may take the attitude that the only way to stop is to stop completely and shake it out. There is, of course, every variation between these two extremes.

In spite of the excellent description of the general way in which A.A. functions, this paper gives a too idealized description of what actually goes on. I feel that it is no reflection on A.A. to point out that it is essentially a

group of people, and not a book or a system. Undoubtedly the results would be even better were they able to function as ideally as the paper suggests. Let me illustrate by citing a few subjects where the ideal and actual practice vary. For instance, the 12 step caller is supposedly a person with 6 months to a year of sobriety. All too often this is someone who has just barely recovered, if that, from a drinking bout of his own. Where this is supposed to be helpful in maintaining his own sobriety, it often works in the other direction, with the worker ending up drinking along with the one who originally asked for help. Again it is said that in the group therapy there are no takers. This, of course, is not so. These people share not only the usual popular prejudices but tend to have them to an excessive degree. Therefore, sexual and delinquency problems may be given a very cold reception and result in rejection if anyone has the temerity to press them. Again it is said that repeated calls for help are treated the same way the 12th time as the first time. I am sure that in most cases, after very few such calls, it would be decided that the applicant was not really serious in helping himself and would be told to give much more concrete evidence of his sincerity.

Another impression that needs some correction is that A.A. considers alcoholism to be an "allergy" plus severe emotional problems. Actually most members feel that drinking is the problem and that a few alcoholics may also have emotional problems.

The paper does not touch on the repressive features of A.A. A.A. cautions against any strong expression of emotions; thus they must not resent too much; they must not crave anything too much—except sobriety. Other things that might have been mentioned are the importance of the rescue fantasies in helping the 12th step worker remain sober when this does work for him. The importance of A.A. as a stepping stone to socialization for many patients was quite well covered and the suggestion that the psychiatrist might use the organization for his patients in this way was also suggested.

My main criticism of this paper is that though it lauds Alcoholics Anonymous, a very worthy organization, it does not give very many clues as to what the psychiatrist should do to improve his treatment to the level of A.A. psychotherapy, nor does it indicate what is lacking in the A.A. program itself. Instead this seems to be covered up by comparing Alcoholics Anonymous with conventional psychotherapy, using such psychiatric terms as

"ventilation of feelings", "transference and counter-transference of relationships", "re-assurance", "re-education", suggestion and personality analysis to do so, much of which is not done.

What I think needs to be pointed out is that a sick person can help another sick person, at least up to the degree of his own adjustment. So also can a healthy person help a sick person, at least up to the limit that his

own defenses are threatened, however a person whose adjustment depends considerably on the maladjustment of the sick **person—in this case, the alcoholic can do little to help the sick one and must take a defensively, if not aggressively negative attitude towards him.** This latter group too often involves those who in the alcoholic must deal with in his efforts to get help, and includes doctors, clergy, lawyers, judges, police, employers and families.

CEREBRAL LOCALIZATION: NOT WHERE BUT IN WHOM?

CURTIS PEGHTEL, PH.D. AND JULES H. MASSERMAN, M.D.¹

Man's knowledge of the function of his most developed asset, the brain, is probably less definitive than that of any other organ, due not only to the difficulties in investigating cerebral function, but also to man's reluctance to confront these difficulties frankly.

We plan here to abstract from our long term study² of the effects of brain lesions in animals a few generally ignored but illustrative factors from which certain significant implications may be drawn.

SUMMARY OF EXPERIMENTAL TECHNIQUES

Sixty-four cats and 49 monkeys were studied for 3 to 24 months to determine their individual and social reactions, and their speed, capacity and techniques in solving a variety of problems of discrimination, pattern relations, manipulation and memory. The data were entered daily and graded on 32 scales that reliably measured various patterns of "normal" and deviant behavior on a 6-point range. Thirty-one of the cats and 23 of the monkeys were then exposed at planned irregular intervals to insoluble conflict situations which induced experimental neuroses characterized by manifestations of anxiety and startle, chronic somatic dysfunctions, regressions to earlier behavior patterns, and various other disruptions of individual and social adjustments(1). The animals were allowed to remain neurotic for 2 to 30 months during which their aberrant patterns were

closely studied. After this, they were operated either by open-field or stereotaxic techniques to produce bilateral lesions in the following areas: in cats, the medial dorsal or anterior thalamus or the amygdaloid nuclei; in cats and monkeys, the angular areas 25 or 34 or both and area 13, the lateral or total amygdaloid, or the temporal regions adjacent to the amygdalae; in monkeys only, the equivalent of a Grantham lobotomy. All of the lesions, except those in 12 cats and 7 monkeys, have been confirmed by serial microscopic sections.

SUMMARY OF RESULTS

Despite inevitable variations in site, blood supply and other factors, lesions in the various regions produced specific effects described elsewhere(2). However, the following *generalized behavior changes* could also be observed in *most* of the operated animals: (a) *partial disorganization* of previous learning, including amodulation of neuritic patterns; (b) *diminished adaptability*, leading to impaired problem solving and social adjustments; (c) *"affective" changes*, with lowered startle and withdrawal thresholds; and (d) *increased susceptibility to adaptational conflicts*. The nature, intensity and persistence of these effects were highly dependent on each animal's *pre-operative* training patterns and experiences, and were also significantly influenced by variations in its post-operative treatment. These factors may be briefly reviewed as follows:

Effect of pre-operative experiences As previously reported(2), characteristic traits tended to be preserved or even accentuated by cerebral lesions, i.e., patterns such as excessive caution, dependency or belligerence persisted after any brain surgery. For example, 6 cats and 6 monkeys which had shown deficient exploratory problem-solving, and socializing behavior during 12 to 18 months of neurosis, remained subnormal in these respects for 2 years after lesions in the amygdalae, the frontal lobes or the mediodorsal thalamic nuclei, even though

¹ Read at the 114th annual meeting of The American Psychiatric Association, San Francisco, Calif., May 12-16, 1958. The studies here summarized were aided by Grant M-730 from the United States Public Health Service, Contract DA-007-MD-403 with the Office of the Surgeon General, and a grant from the Mental Health Fund of the Department of Public Welfare of the State of Illinois.

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³ Thanks are due to these collaborators in our various studies: Louis Aarons, Ph.D., Jacques Cain, M.D., Lawrence Corey, M.A., Paul Favero, D.D.S., Paul Hutt, Ph.D., Robert Johnson, M.D., Arthur Kling, M.D., Melvin Levitt, Ph.D., Thomas McAvoy, B.S., C.E., Gisela Mendel, M.A. and Dino Riccio, M.D.

the animals with amygdaloid lesions became typically hypersexual and the lobotomized ones showed characteristic hyperactivity.

Effect of postoperative treatment. When the operated animals were isolated from laboratory experiences for periods of 4 to 5 weeks, many of them, as previously reported, showed a temporary or permanent impairment of their learned skills and social patterns. We have since found that monkeys—particularly those with lesions in the cingulate areas—which had not shown these effects after short periods of relative inactivity, did so when the imposed inactivity was extended to 10 or 12 weeks. (Fig. 1.) In further illustration of the effects of social setting, it was noted that unoperated monkeys usually confined their quarrels or attacks to specific cagemates or neighbors: in contrast, such hostilities in animals with cerebral lesions, once started, tended

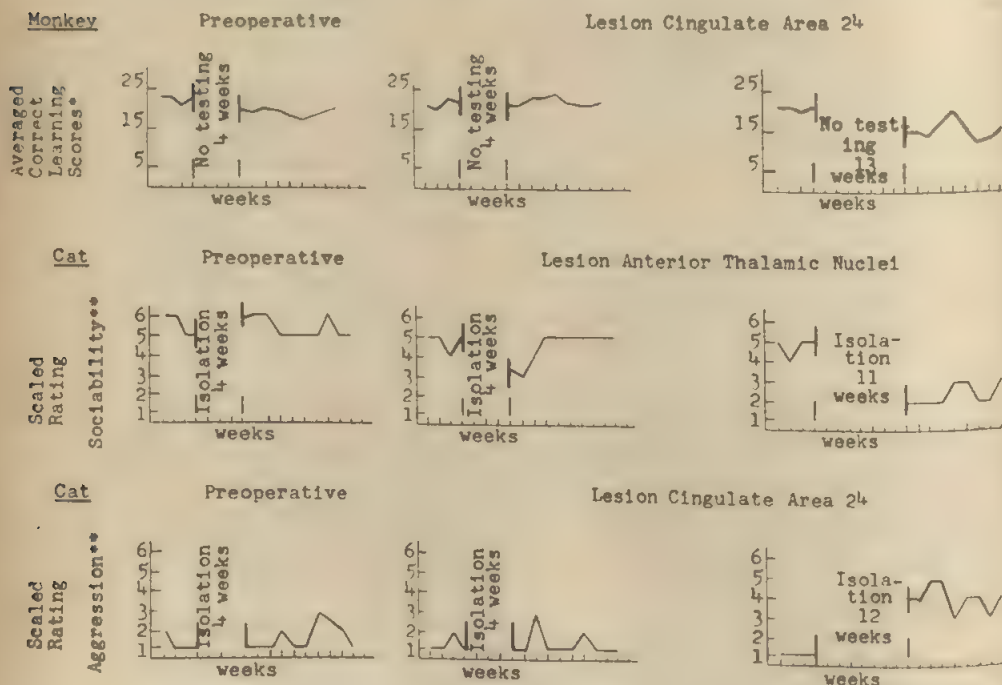
to generalize to many or all other animals in the colony unless the operated animals were paired with only the most congenial or unassailable of partners. (Fig. 2.)

Comparison between neo- and paleo-cortical lesions. In view of certain current theories which hold that "emotions," isolated from the behavior of which they are a part, may largely be mediated by the paleo- and sub-cortical areas of the brain, it is significant that our data on the effects of partial or almost complete lesions of the amygdaloid area and/or adjacent temporal regions with amygdaloid connections indicate that differences between the neo- and paleo-cortical groups are mainly quantitative and not statistically significant.

DISCUSSION

The experimentalist, the clinician, and more recently, the "psychopharmacologist" (3), have too often been exclusively con-

Figure 1. Effects of Successive Periods of Relative Isolation on the Learning Scores and Sociability or Aggression Ratings for Cats and Monkeys



- * Learning scores represent performance on "oddy", a test which requires pattern recognition.
- ** These ratings made from detailed model scale. Higher ratings represent increased Sociability with other cats and increased inter-cat aggression.

connected with the "specific" actions of various drugs or cerebral lesions and have tended to disregard the possibility that the ensuing effects likewise depend on the unique physiological, psychological and experiential background of each subject. Unfortunately, this tendency can result in misleading oversimplifications; for example, Hebb (4) has shown that **some of our concepts of frontal lobe functions have been derived not so much from experimental data as from our yearning after facile theories and systematizations.** And yet, even in the laboratory not only minor variations in anatomy and surgical technique but **even more subtle differences in (a) the constitution and experiences of each animal and (b) its necessarily different handling by and interaction with each experimenter** may greatly alter the results. To analyze, weigh and reassemble these factors takes thoroughness, thought and time, but without these no premise can be truly tested.

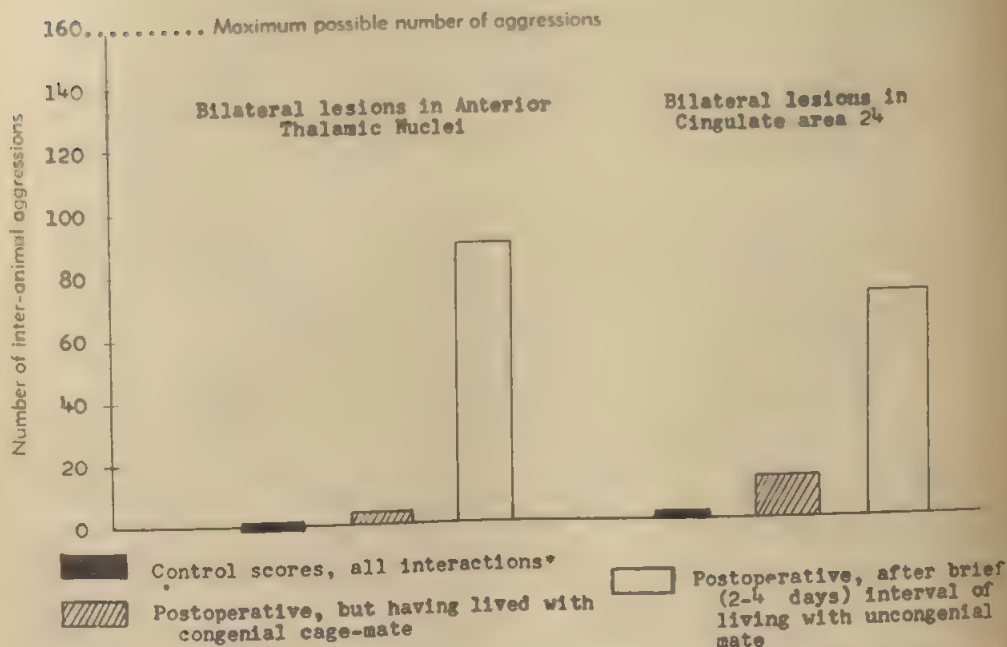
Otherwise, comprehensive, though necessarily based largely on special studies, the use of selected data, or on inadequately analyzed inferential procedures.

SUMMARY

The individual and group reactions, learning techniques and capacities, and neurotic and drug influenced behavior patterns of 64 cats and 49 monkeys were studied from 30 to 75 months before and after the implantation of lesions in 10 neocortical and sub-cortical brain areas. The data suggest that:

1. There are effects specific to each lesion despite inevitable variation in site, altered blood supply, etc.
2. There are a number of general changes common to lesions in several different areas.
3. The effects of any lesion are highly relatable to pre-operative characteristics and acquired patterns of behavior.

Figure 2. Frequency of Inter-animal Aggressions after Cerebral Lesions for Two Monkeys



* At no time did we have uncongenial animals living together for more than a few days. Preoperatively this brief interval made no difference in inter-animal aggressions, in contrast to the postoperative data presented here.

4. The effects are further dependent on the nature of post-operative treatment and experience.

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UNDERGRADUATE PSYCHIATRIC EDUCATION AS REFLECTED IN FINAL EXAMINATIONS

CHARLES WATKINS, M.D. AND EDWARD KNIGHT, M.D.

This survey came about as a direct result of discussions by participants at the meeting of the Association of Southern Psychiatry Professors in December, 1956. These discussions clearly indicated that a high proportion of the participants were concerned as to what general course, if any, psychiatric education was taking at this time. The reason for this concern was the fear that their own programs might in some way be failing to utilize techniques or to include material of generally recognized value. Methods of evaluating results of teaching were also of concern.

As this anxiety was also held in our own department, we began to study possible methods of obtaining information about psychiatric education in general.

It became clear that if such a study was to be made, certain definite decisions as to limits must be decided upon. The first decision was that any study undertaken at this point should be a fact-finding one: no attempt to evaluate as to the suitability of content should be made. Our next decision concerned whether to attempt a direct or an inferential study of the curriculum of various schools.

The direct method of study involving visits to various medical schools offers very definite advantages. This type of study would give the investigator an opportunity to observe the actual teaching program being carried out, to discuss the program with both the non-participating and participating faculty, as well as with students and possibly with recent graduates. It is generally recognized that members of the department frequently do not have the same impression as to what they are teaching as do members of other departments and students. This method would involve considerable expenditure of time and money.

Unless it were conducted by a relatively large group of workers the time involved in the survey would allow for considerable modification in the teaching program between the time the first school was visited and the last. We felt that this method was impractical at this time and chose the indirect or inferential method of studying the teaching program.

A relatively simple type of survey could have been conducted by studying the outlines of the courses which are contained in the official school catalogues. Included in the usual catalogue are not only the hours allocated to the department, but a breakdown of hours by year and by title of course, and in most cases, comments as to the content of the course. There are exceptions to this, however, in that some schools do not list in the catalogue the number of hours various courses are taught. A disadvantage to this method is that the actual teaching schedule is frequently at variance to the time and title as outlined in the catalogue.

A third method of surveying content would be by the use of mimeographed material that is given to students. This would include lectures, bibliographies, and various other teaching aids. We felt that this would be a considerably more precise measure of the course than catalogue information, but that it would have a number of inherent disadvantages, one being that the material would in many instances be incomplete. It is frequently difficult to collect all of the material that is passed out to students during their teaching year after the courses have been organized or completed.

We finally decided upon written examinations as our subject of study. A study of this type is clearly only a tentative step toward a comprehensive survey of psychiatric education and we are offering this report in that light.

Questions asked on final examinations are, to some extent at least, a reflection of the general content of the courses they are designed to evaluate. There are certain serious

¹ Read at the 114th annual meeting of The American Psychiatric Association, San Francisco, Calif., May 12-16, 1958.

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defects in the use of examination questions, however. Some schools do not give written examinations. Frequently the course grade is determined primarily by the clinical work, and examinations are given only to comply with university regulations. In such instances, the examinations tend to be brief and reflect little the nature of the course. Finally, there appears to be some reluctance on the part of psychiatrists to give comprehensive written examinations. In addition to the information obtained about content we felt that we might be able to arrive at some tentative conclusions about the attitudes of psychiatric educators toward examinations.

In spite of these disadvantages, certain advantages become evident. One is the fact that if the request for examination questions could reach the department at about the time of examination there should be a high probability of a response. Of the schools that did respond, it would be possible to check the examination questions against the curriculum as listed in the catalogue to determine whether or not the response appeared to be complete for the entire teaching program. Examination questions give us definite objective data that we could assess and readily quantify.

To collect the data we used as reference the directory of the Association of American Medical Colleges. All departments of psychiatry listed in it with the exception of the graduate departments were contacted. Letters were written to the department chairmen outlining our project and requesting that they send us copies of examinations given to their medical students during the year 1957. The letter was mailed late in May so that it would reach the schools at about the time of final examination.

In this study we are using information obtained from the 4-year medical schools in the United States and in Puerto Rico. It was felt that the inclusion of the Canadian schools might shift our results because of the difference in curriculum planning in Canada. Material from the 2 year schools will be reported later.

Number of U. S. Schools Contacted	78
Total Number of Responses	63
Responses from Two Year Schools	2
Responses Which Did Not Include Complete Sets of Questions	6
Total Number of Schools Included in Survey	55

The geographic distribution of schools used in survey is as follows: Eastern 17, Southern 16, Mid Western 16, Far Western 6.

In a previous report submitted to the Association of Southern Psychiatry Professors in January, 1958, we reported on the formal structure of the final examination in psychiatry. That report dealt with the use of objective and subjective questions, the use of the case report in the final examination and with the integration of the various disciplines in the examination, as well as with other aspects of formal structure.

Note was made upon the increase, or lack of increase of complexity of the examination during the 4 years.

Courses and examinations were given as follows:

	4 Years	3 Years	2 Years	1 Year	None
Courses taught	49	5	1		
Written examinations given	7	25	14	6	3

Of the total of 137 sets of examinations the distribution and the number of questions by year was as follows:

	1st Year	2nd Year	3rd Year	4th Year
Examination Questions	41	46	36	14
	1212	753	809	335

From these figures it is apparent that examinations are given most frequently in the first 2 years. The reliance upon the examination is much less during the clinical years when the student has a greater amount of personal contact with the teaching staff.

It is also obvious from these figures that any numerical breakdown of type questions has only relative value in the light of the total time allocated to the course. The short 18-32 hour lecture course in the first year was more likely to end with a final examination than was the much longer course offered in the third and fourth year.

The examinations of the individual schools were studied by year rather than as a whole because of the realization that the difference in hours and examination frequency necessitated this.

In our analysis of the questions, we used a somewhat arbitrary and unrealistically distinct breakdown in various categories of

subject matter. The questions were placed in the following categories: basic science, clinical, interdisciplinary.

Basic Science Questions were those considered to be related primarily to the area of normal development and function of the organism, even under stress. Questions were not considered to be in this category if they were clearly associated with clinical syndromes or symptoms. For example, a question related to the vicissitudes of the child during the anal period was considered to be basic science, while a discussion of the relationship of neurotic symptomatology to experiences undergone during the anal period was considered to be clinical.

Clinical Questions were those considered to be related to clearly stated medical problems, either as to understanding, description or management.

Interdisciplinary Questions were those which clearly recognized the role of the related disciplines, medical or otherwise in the care of the emotionally ill.

The groups were further subdivided in the following manner:

Basic Science

- a. Psychodynamic
- b. Other psychological theory
- c. Cultural
- d. Neurophysiological

Clinical

- a. Psychodynamic psychopathology
- b. Descriptive diagnosis
- c. Practical management

In addition, the clinical questions were evaluated as to whether they appeared to be related to psychiatry as a speciality or to the practice of medicine with a recognition and management of emotional problems by the nonpsychiatrist.

We quantified the material in the following manner. Examinations which seemed strongly oriented toward a particular emphasis were marked 2+. Sets with moderate or minimal emphasis were 1+. Those where we felt little or no emphasis were left blank.

The breakdown of the major points of emphasis using this rating scale and the consensus of two raters is shown in the table at the top of the next column.

It is clear that even in the first 2 years there is a strong emphasis upon the clinical aspects of behavior and some emphasis

Basic Science	1st	2nd	3rd & 4th
	Year	Year	Years
Psychodynamic	72	27	
Psychological theory (other)	13	8	
Cultural	16	11	
Neurophysiological	21	14	
Clinical			
Psychodynamic psychopathology	48	37	48
Descriptive diagnosis	40	51	46
Practical management	15	17	36

upon clinical management. It is worthy of note that the frequency with which the examinations were worded in psychoanalytic terminology decreased from 39 in the first 2 years to 15 in the clinical years. The total number of questions involving interviewing techniques and processes was 11 for the entire 4 years, most of which were in the second and third year.

General medical and nonspecialist clinical management totaled 50 in the first 2 years, whereas there were 40 points of emphasis in the third and fourth year. This must be evaluated in the light of the fact that there were fewer examinations given in the clinical years than the preclinical.

Relatively little emphasis was placed upon the care of the hospitalized psychotic, although most schools clearly indicated that the student was acquainted in general with this type patient.

There was little evidence of integrated team orientation throughout the examinations. Clinical psychological questions were frequently clearly separated from the psychiatric questions. The recognition of the role of the social worker and the psychiatric nurse was notably ignored in most instances.

It is interesting to note the relatively small number of examinations that give direct evidence of an expected personal growth change in the student as part of the study of human behavior. There was practically nothing involving group dynamics or group theory and very little pertaining to the psychological aspects of hospital administration.

The emphasis as far as age distribution is concerned is primarily on the adult, with a relatively high emphasis on children and adolescents, and a relatively slight emphasis on geriatric problems.

In going over the examinations we found that there appeared to be no notable em-

phasis in any one geographic area. In general the range of subject matter appeared to be fairly uniform throughout the country. In a small proportion of the examinations there was clear evidence of local orientation. These were worded in such a way that an outsider was unable to answer because of lack of familiarity with the semantics involved.

SUMMARY AND CONCLUSIONS

Only general suppositions can emerge from a survey of this sort with regard to content of the examinations. These are: There is a definite trend in the direction of teaching human behavior as a basic science. It seems to be implemented by the use of clinical material rather than basic psychological, cultural and neurophysiological data. Human behavior as a basic science is often approached by simply teaching the standardized conventional psychoanalytic theory of personality development, without adequately relating this approach to cultural and biological factors.

There is some hint of a peculiar dilemma facing psychiatric educators. Clinical psychoanalytic material was used to outline basic science phenomena. In clinical handling of patients these same principles could not be directly applied with ease, thus the handling of patients was by the usual pragmatic psychiatric methods. It is probable that this occurs because intensive psychotherapy is not usually possible during medical training. Therefore basic psychoanalytic science was not really integrated with clinical practice even though clinical analytic material was used in first two years.

DISCUSSION

Kenneth E. Appel, M.D. (Philadelphia, Pa.)—There are many reasons, for the dissatisfactions of teachers of psychiatry with their instruction and its absorption and comprehension. The G.A.P. report on psychiatric education forms an excellent orientation as does the book from the Cornell Conference, edited by Whitehorn.

Drs. Watkins and Knight's paper repre-

sents another method of evaluating undergraduate psychiatric education: through a study of final examinations. General trends appear in the study of 55 medical schools. Courses are taught in many schools in all 4 years. This is progress.

Examinations are given mostly in the first 2 years. The lessened frequency of examinations in the last 2 years poses certain questions. What are the reasons for this? Examinations are held in the other branches of clinical medicine. Is it felt there is not enough solid substance on which to examine? Is the staff not large enough adequately to deal with examinations in the latter years? Is there so much of a mixture of clinical material in the first years when basic science is to be taught that the question basket is drained dry?

It would seem to us that the study points to the importance of revamping teaching in the first 2 years. Human behavior can be taught as basic science, bringing in experimental literature and experimental demonstrations, whether from physiology, chemistry, psychology, sociology, or cultural anthropology. There is enough experimental and basic science literature at hand which correlates well with the other basic science courses in the technical school curriculum. It seems to us that bringing the students into vital contact with the research work going on in basic psychiatry would not only vitalize psychiatry but awaken responses in medical students to the fascinating challenges our science presents today, and thus develop recruits.

Many disquieting observations were made in the paper—one of them was the evidence of so little attention being paid to interviewing techniques and processes. This is important not only for the psychiatrist but for all practitioners of medicine in order to evaluate emotional and stress factors which are so common in the practice of medicine today.

Calling attention to defects will call to mind remedies and further discussions of professors of psychiatry, and let us hope they will not be limited to the Southern professors.

EMOTIONAL CONTENT OF SUICIDE NOTES¹

JACOB TUCKMAN, Ph.D.,² ROBERT J. KLEINER, Ph.D.,³
AND MARTHA LAVELL, M.S.S.²

Suicide, a subject for study, conjecture, and research throughout the ages, has been explained from many different viewpoints. Menninger utilizes the concept of self-directed aggression and amplifies it into a hypothesis which explains suicide as mainly the result of intrapsychic factors. He believes that suicide involves 3 motivational components, the wish to kill, the wish to be killed, and the wish to die, "deriving from primary impulses of destruction"(1). Fenichel explains suicide as a function of hostility directed against the self because "of a punishing superego that prevents expression of hostility"(2). Other writers subscribing to the relation between hostility and suicide give slightly different explanations of the source, direction, and intensity of hostility.

In classifying theories of suicide according to the various emphases given to the underlying motives of the suicidal act, Jackson mentions not only self-directed aggression but also (a) rebirth and restitution and (b) despair, loss of self-esteem, and the real or imagined loss of the love object(3).

Since hostility is an integral part of many theories, the purpose of this study is to test the hypothesis that suicide is a function of hostility. The relationship between affect and method of suicide as well as the social characteristics of the suicide will also be analyzed. The approach is one employed by Schneidman and Farberow(4), who analyzed the content of the suicide note, the last recorded verbal expression of the suicide. The significance of the note is based on the premise that its content represents the thoughts and affect of the suicide at the time of note writing and death. In effect the note is a projective product of the suicide's mind: the situation is totally

unstructured since no request has been made of the individual to produce a note and there are no norms to guide him about its content.

PROCEDURE AND RESULTS

In connection with an epidemiological study of 742 deaths classified as suicide by the Office of the Medical Examiner in Philadelphia over the period from 1951-1955(5), it was found that notes had been left by 24% of the group. A comparison of those who left notes with those who did not showed no significant difference between the two groups with respect to age, race, sex, employment, marital status, physical condition, mental condition, history of mental illness, place of suicide, reported causes or unusual circumstances preceding the suicide, medical care and supervision, and history of previous attempts or threats. However, there was a significant difference between the two groups in the method of suicide. Eighteen percent of those who left notes, compared with 8% of those who did not, used poison. Twenty-nine percent of those with notes, compared with 19% of those without notes, used firearms. Forty percent of those who did not leave notes, compared with 31% of those who did, hanged themselves. These findings about the lack of difference between those who left notes and those who did not are similar to those in the study by Schneidman and Farberow(6) which reported, however, a lower percentage of note writers (15%) than in this study.

The records in the Medical Examiner's Office showed that, of 178 individuals who left notes, it was possible to locate notes left by 165, the loss being due to administrative difficulties. Of this number, 35% were women; 7% were nonwhite. The group ranged in age from 16 to 83 years, with a median age of 54.5.

The notes varied in length from a few words to several pages. Some were scribbled in pencil on a scrap of paper; others were written on hotel or personal

¹ Read at the 124th annual meeting of The American Psychiatric Association, San Francisco, Calif., May 12-16, 1958.

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stationery; and one had been found on a dictaphone cylinder. Some notes bore definite salutations to relatives, friends, or police; others were not addressed to any specific person. Most notes bore a signature. Almost all had been left near the scene of the suicide or in a few cases on the person; others had been mailed to relatives and friends. With few exceptions, the notes were legible and coherent.

Thirty percent of the notes gave no clue about the reason for suicide. Nineteen percent gave physical illness as the reason; 11% referred to some aspect of mental disturbance; 11% mentioned marital difficulty or family discord; 11% gave vague reasons indicating that life was intolerable, e.g., "couldn't stand it any longer," "no way out," "hell on earth," "sick of everything." Four percent made reference to financial difficulty; 2% mentioned death of relatives; and 4% gave various combinations of poor physical and mental health, financial difficulty, and death of relatives. Eight percent gave reasons not readily classifiable.

Seventy percent of the group left only one note, 19% left 2, 6% left 3, and 6% left 4 to 6 notes, making a total of 247 notes. However, for the purposes of this study, all notes written by any one person were treated as one. The reasons were: first, in many cases, the distinction between singular and multiple notes was only apparent since a single note might carry messages to more than one person; second, it seemed more meaningful psychologically to consider the notes left by each person as a whole rather than separately. Thus, the number of notes referred to hereafter will be 165 instead of 247.

A preliminary content analysis of 27 notes selected at random suggested the following categories into which the notes could be classified according to affect, with hostility at one end of the scale and positive feeling at the other. Examples of notes in each category are given, with salutations and signatures omitted.

1. *Hostility Directed Outward.*

I hate you and all of your family and I hope you never have a piece of mind. I hope I haunt this house as long as you live here and I wish you all the bad luck in the world.

2. *Hostility Directed Inward.*

I know at last what I have to do, I pray to God to forgive me for all the many sins I have committed and for all the many people I have wronged, I no longer have the strength to go on, what I am about to do might seem wrong to a lot of people, but I don't think so, I have given it plenty of sober consideration.

3. *Neutral Affect.*

Everything I own goes to Miss ----- in case of my death.

4. *Positive Affect.*

Please forgive me and please forget me, I'll always love you. All I have was yours. No one ever did more for me than you, oh please pray for me please.

5. *Combination of Outward-Directed Hostility and Positive Affect.*

I am sorry I have to take this way out. But you can see there's no other way. She would just give me and the kids a hard time for the rest of our lives, also the club deal is away out of my hands contact S----- about the Girls and the M-----s about B-----. All the money I have in the world is here. May God Bless you and your family and may he look after mine.

May she rot in hell with me.

6. *Combination of Inward-Directed Hostility and Positive Affect.*

I am at the end of a rotten, stinking low life—What I have done in the last five years of my miserable life is even to much for me—I blame no one but myself—for if I was just a half a man with just a spark of decency in me—all this wouldn't have happened to me—I admit that I was pushed into it or should I say taken by the hand like a child introduced to a new toy—from then on I was on my own I lied and cheated and stold and borrowed from a cent on up—I did not draw the line on anything or anybody—

My Dear Sister I love you and B----- more than life itself—I have brought shame and heartaches for you both—Doing what I am about to do is the only decent thing that I can do with this miserable life—You see Sis *you* alone was the only one who understood what had happened to me—When I came back to being a free man once again I was determined and full of hope that this time I was going to make it—to put down on paper the obstacles and hazards that I had to over come would take me a week—small things like being shook down for what I happened to have in my pocket—pulled out of the movies and being embarrassed by rolling up sleeves—you see I

needed help in a lot of ways—The main thing was a job—I believe that if I had a fairly good job I would have made it—That was the biggest assist I needed but it never happened. J—— —you are a swell guy—an ace—to you I couldn't explain and make you understand why I did what I did.

Whats the use or to what purpose am I living—I pray to God to let me take my life.

The notes were classified independently by 4 raters⁴ according to the categories outlined above. In 48% of the cases there was complete agreement among the 4 raters; in another 30% of the cases there was agreement among 3. Using the paired-comparison method, the amount of agreement between any two raters varied from 70% to 84%. The average percentage of agreement was 77%. It is noteworthy that the amount of agreement was so high among raters from 3 different disciplines.

The classifications of the notes showed little hostility in pure form. Using the average of the 4 raters, outward-directed hostility was evident in only 5% of the notes and inward-directed hostility in 1%. More frequently, hostility appeared in combination with positive affect. Nine percent of the notes showed a combination of outward-directed hostility and positive affect; 7% showed inward-directed hostility and positive affect; and 2% showed a combination of the three. Considering all notes in which hostility was evident, in its pure form or in combination with positive affect, the data indicate that hostility is characteristic of 24% of the notes. By contrast, 51% of the notes were classified as expressing positive affect without hostility and 25% as neutral affect. The variation among the 4 raters was less for hostility (range between 22% and 28%) than for positive affect (39%-59%) and for neutral affect (18%-32%).

For purposes of relating affect to the personal and social characteristics of note writers as obtained from the medical examiner's records, it was necessary to arrive at one rating for each note. Accordingly, the raters jointly reviewed any notes on which agreement was less than 75% in order to reach a consensus. Each note was

then placed in one of the 3 categories: positive, neutral, or a combination.

There were significant age differences with respect to affect (Table 1). For those aged less than 45 years, 28% of the notes were hostile, 63% positive, and 9% neutral; but for those aged 45 and over, 16% were hostile, 49% positive, and 35% neutral. Thus both extremes of affect decreased with age, but hostility showed more decline.

TABLE 1

Affect	AFFECT IN NOTE AND AGE OF SUICIDE	
	Under 45 years n=54	45 years and over n=111
	%	%
Hostile	28	16
Positive	63	49
Neutral	9	35
	$\chi^2=20.11$	$df=2$ $P<.001$

Affect also differed significantly according to marital status (Table 2). In general, there was little difference among single, married, and widowed, except that married individuals showed somewhat greater positive affect. As might be expected, hostility was most evident in the separated and divorced individuals. For this group the notes showed hostility in 43% of the cases, compared with 12% to 16% in the single, married, and widowed.

TABLE 2

Affect	AFFECT IN NOTE AND MARITAL STATUS OF SUICIDE			
	Single n=33	Married n=71	Widowed n=31	Separated or divorced n=30
	%	%	%	%
Hostile	12	15	16	43
Positive	52	63	52	33
Neutral	36	21	32	23
	$\chi^2=5.53$	$df=6$	$P=.02$	

No relationship was found between affect and sex, and between affect and method of suicide. For some factors such as physical health, mental health, medical supervision, and history of mental illness, where information was lacking in a large number of cases, and for other factors such as race, living arrangements, and motivational content of the note where the data were too fragile, no statistical tests were made.

⁴The 4 raters included a psychiatrist in addition to the 3 authors.

The hypothesis that suicide stems solely from negative affect is supported by the content of the notes. Although there is a mixture of affect from positive feelings being noted in half the notes, the most neutral feelings noted in 21% of the notes, found also in 26%. The assumption is that the neutral content of the note represents the true emotions of the individual at the time of suicide. The notes with few exceptions seem to be very coherent, clear, and to the point, and not covering up or fabricating, but rather show a sort of clarity and a tendency to sum up life's experiences.

The finding of a range of affect in the notes seems to suggest a multiplicity of factors in suicide. There is an interplay of emotional conflicts and reality frustrations but the pattern of the interplay varies with age. In the younger suicide, interpersonal and intrapsychic conflict may create or intensify environmental stresses, whereas in the older suicide such conflict stems more from reality problems such as old age, reduced income, or poor physical health, i.e., factors beyond his control.

In this study the writers were impressed with the possibility that in a number of cases the suicide could have resulted from a conscious, rational decision reached by weighing the pros and cons of continuing to live, although to a lesser extent unconscious factors may have been operating. Particularly in the older age groups there appears to be loss of morale in the light of physical illness or economic plight, and a desire to achieve a tensionless worry-free state. The wish for relief from dissatisfying life experiences becomes so strong that thoughts are not of self-destruction but of relief from extreme discomfort. Jackson also makes the point that "suicide is a symptomatic act, not a discrete entity." He further postulates a continuum: "at one extreme would be the 'irrational' suicide who kills himself entirely because of inner emotional make-up, while at the other extreme would be a 'rational' suicide who destroys himself because of external conditions; in between would be the 'neurotic suicide' under some daily emotional strain and the lonely aged person. Thus suicide can be viewed as a combination of

the individual's inner emotional make-up and external stress or extreme social pressures—a concatenation of 'psychic forces' and 'environmental factors' (3).

Organized society is opposed to suicide, as it is the antithesis of racial preservation and also because it allows a loophole by which individuals can escape from the authority of the state and the church. Suicide has been regarded as a sin and a crime in many cultures, some of which have punished it by such means as mutilating the corpse. It is small wonder, then, that suicide is often considered an "irrational" act derived largely from unconscious (hostile) impulses.

The finding of positive sentiments in half the notes suggests that suicidal individuals can be worked with toward a resolution of their problems, with their positive feelings providing an important motivational force. This has implications for preventive programs. There is evidence in the literature that a substantial number of those committing suicide had made previous suicidal attempts or threats(7) or had shown other evidence suggesting a suicidal tendency. Consequently, when these individuals are identified and referred for appropriate psychiatric care, the recognition of the presence of positive affect may indicate a more favorable prognosis than hitherto realized.

SUMMARY AND CONCLUSIONS

1. An analysis was made of the emotional content of notes left by 165 suicides in Philadelphia over a 5-year period. Over half the notes showed such positive affect as gratitude, affection, and concern for the welfare of others, while only 24% expressed hostile or negative feelings directed toward themselves or the outside world, and 25% were completely neutral in affect.

2. Persons aged 45 and over showed less affect than those under 45, with a concomitant increase in neutral affect.

3. Persons who were separated or divorced showed more hostility than those single, married, or widowed.

4. It is believed that these findings have certain implications for further understanding of suicide and ultimate steps toward prevention. The recognition that positive

neutral feelings are present in the majority of cases should lead to a more promising outlook in the care and treatment of potential suicides if they can be identified.

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Fifteen percent of the group had side reactions, which were readily relieved by reduction of dosage or temporary withdrawal; 81% showed improvement; slight, 27.2%; considerable, 21.2%; great improvement, 33.1%.

In 60 patients chosen at random the blood pressure drop was 12 mm. systolic and 9 mm. diastolic. Tachyphylaxis to this slightly hypotensive action of perphenazine develops more rapidly than with Thorazine.

Patients who went home were advised to continue their maintenance dose of Trilafon indefinitely and were given the opportunity to return for a check-up every 6 weeks. Few made use of this privilege but many who did have been taking Trilafon for 3 years with no deleterious results and their psychoses continued to be in remis-

sion, while blood and liver function studies remained normal.

Trilafon repetabs are the preferred form of oral medication among both hospitalized and out patients because they provide a sustained plateau of action, save time for nurses, attendants and patients and decrease the possibility of omitting a dose in extra-mural care.

Trilafon, in properly individualized dosage, administered for a sufficient length of time, has a most satisfactory therapeutic index because of its high potency and relatively few and benign side reactions. It is more active parenterally than orally. Trilafon is effective in a high percentage of neuropsychiatric patients, the behavioral improvement was 81.5% betterment in this study.

A STUDY OF THE VALUE OF THE FUNKENSTEIN TEST AS AN INDICATOR OF THE EFFECTIVENESS OF ATARACTIC DRUGS

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Thirty patients were tested to observe the correlation between their physiological response to the Funkenstein test and their clinical response to the ataractic drugs, such as reserpine, a derivative of *Rauwolfia* and chlorpromazine, a derivative of Phenothiazine. The patients, all males, aged from 20 to 50 years, were in good physical health and diagnosed either as schizophrenics or personality disorders in whom anxiety was a major symptom.

The Funkenstein test was given in the usual way. 1. Mecholyl 10 mgs. was given intravenously under basal conditions one day, and epinephrine 0.05 mgs. were given intravenously the following day. Each time the effect on the blood pressure and the time necessary for return to normal were measured. This was followed by the administration of chlorpromazine 50 mgs. t.i.d. for 2 weeks, in turn followed by reserpine 0.5 mgs. t.i.d. for 2 weeks. The double blind method (2) was used for clinical evaluation which was done both

before and after each period of drug administration.

There were no untoward effects resulting from the Funkenstein test. According to the blood pressure response as described by Funkenstein (3), 5 patients were mecholyl sensitive and 6 were epinephrine sensitive. No patient was found to be sensitive to mecholyl and epinephrine. Three patients showed clinical anxiety upon the administration of mecholyl and 4 showed anxiety with the administration of epinephrine, but in no case were they the same patients who were either mecholyl or epinephrine sensitive according to the blood pressure response.

RESULTS

Seven patients showed significant clinical improvement with chlorpromazine, one patient showed significant clinical improvement with reserpine, and one became depressed with the administration of reserpine. The patients who showed a response to the drugs were from the group which showed neither mecholyl nor epinephrine sensitivity.

¹ VA Hospital, Bronx, New York.

Comparing the results of the response to the Funkenstein test with the clinical response to treatment with chlorpromazine and reserpine, we found that the test offers no prognostic indicator as to the clinical effectiveness of either of the two drugs tested. An interesting result is that those patients who showed no response to the Funkenstein test seemed to have the great-

est improvement with chlorpromazine. Seven of the 12 patients showed a considerable improvement with the drug (See Table 1).

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TABLE 1

		Improved with Chlorpromazine	Improved with Reserpine	No Improvement
Mecholyl sensitivity (according to BP response)	5	0	0	5
Epinephrine sensitivity (according to BP response)	6	0	0	6
Mecholyl induced anxiety	3	0	0	3
Epinephrine induced anxiety	4	0	0	4
No response to Funkenstein test	12	7	1	4
Total Number of Patients	30	7	1	22

TREATMENT OF AFFECTIVE DEPRESSION WITH TRANS-DL-PHENYLCYCLOPROPYLAMINE HYDROCHLORIDE :¹ A PRELIMINARY REPORT

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Between December 1, 1958, and March 3, 1959, a total of 52 patients were treated with trans-dl-phenylcyclopropylamine hydrochloride at the Rochester (Minnesota) State Hospital. Patients' ages ranged from 24 to 85 years (average 54.7 years). All were women suffering from affective depression of various types. Thirty-eight were admitted during the specified period, in order, 13 were selected patients who had not responded to other forms of treatment over prolonged periods, and one patient was treated entirely on an outpatient basis.

The compound was given orally, commencing with 10 mg. twice a day. In most cases this dose was sufficient. In a few instances it was increased to 10 mg. 3 or 4

times daily. One patient received 20 mg. twice a day.

At the end of the period 21 patients had recovered, 15 were much improved, 6 were slightly improved while 7 remained unimproved. In 3 cases the treatment was terminated before sufficient time for evaluation had elapsed. Seventeen patients had been dismissed from the hospital and 11 were ready for dismissal. Since a number of the other patients under treatment were improving, the result undoubtedly will be better as time passes.

In 8 cases in which the danger of suicide was great or the improvement was not great after a few days, electrotonic treatment was administered in addition to the medication. In most instances only a few electrotonic treatments were necessary. No difficulty was encountered with this procedure except for prolonged apnea in one patient after the first treatment.

A decrease in blood pressure was noted

¹ This compound was supplied gratis for purposes of clinical study, under the designation of "SKF 385," by the Smith Kline & French Laboratories, Philadelphia, Pa.

² Rochester State Hosp., Rochester, Minn.

³ The Mayo Foundation, Rochester, Minn.

in all the patients treated. Orthostatic hypotension developed in one patient. On the fourth day of medication, with a dose of 10 mg. twice a day, this patient complained of dizziness. The blood pressure was found to be 210 systolic and 90 diastolic, in millimeters of mercury, when she was lying down and 110 systolic and 72 diastolic, when standing. Use of the medication was discontinued immediately, and the hypotension disappeared within 4 days.

Insomnia was a universal complaint. A mild soporific agent, such as ethchlorvynal (placidyl) or diphenhydramine hydrochloride (benadryl), given at bedtime, sufficed to establish regular sleeping habits within a short time.

Some preliminary electroencephalographic observations were made in 5 patients by Dr. G. E. Chatrian. In 4 patients no major changes were noted between recordings before the treatment was commenced and tracings after 7 days of medication consisting of 10 mg. of the drug twice a day. When these patients, in whom orthostatic hypotension did not develop, changed from the lying-down to the erect position the recording often was disturbed by muscular, ocular and mechanical artifacts. When the record-

ing was readable no noticeable slowing was observed. Similarly, no slowing of the electroencephalographic rhythms was observed in one patient in whom orthostatic hypotension developed. In this patient no recordings were taken before the hypotension developed.

The mental response to treatment with the drug usually was very rapid. In many instances both depression and agitation were greatly diminished within 24 hours, and had disappeared altogether within a few days. A high percentage of the patients could well have been treated entirely on an outpatient basis, had we been conversant with the effects of the medication. By the same token, many others could have been dismissed from the hospital much earlier than they were.

So far, all the patients who have been dismissed from the hospital continue to take the compound. In some cases the dose has been reduced. All are returning to the hospital regularly for follow-up studies. How long use of the medication should be continued or how soon it may safely be discontinued will be subjected to further study. To the present there has been no relapse.

THE USE OF TRIFLUPROMAZINE WITH IPRONIAZID FOR THE TREATMENT OF CHRONIC SCHIZOPHRENIC PATIENTS

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This study was undertaken to determine whether the combination of triflupromazine and iproniazid² would have more beneficial effects upon a group of chronically ill, withdrawn, apathetic, and regressed schizophrenic patients than triflupromazine alone. It was hypothesized that iproniazid, a psychic energizer, might aid in increasing interest, energy level, and participation in activities(1, 2), while triflupromazine, a tranquilizer, might decrease the irritation, tension, and exacerbation of disturbing

thoughts and feelings which have been found to accompany administration of the former(3, 4).

Twenty schizophrenic women were paired as to age, depth of regression, chronicity of illness, and apathy. Using the double-blind method over a 3 month period, triflupromazine and iproniazid were administered to half the patients as the experimental group, while triflupromazine plus a placebo were given to the control group. The patients received no medications for 2 weeks prior to the start of the project; they were rated on behavioral scales before being given the drugs and then at 2 week intervals. The initial dosage

¹ VA Hospital, Topeka, Kan.

² Triflupromazine was supplied as Vesprin by E. R. Squibb & Son, iproniazid as Marsilid by Roche Laboratories.

was 50 mgs. t.i.d. for each drug, and after 2 weeks the levels were adjusted as deemed necessary for the individual patients. It was necessary to discontinue the iproniazid in only one instance because of ataxia and hypotension. Side effects observed were those previously described by other authors. The ratings were made by the ward physician who evaluated accessibility of the patients, two nursing assistants who considered manageability (5 scales) and sociability (2 scales), and a corrective therapist who rated the patients on a dimension of involvement in activities.

There were no statistically reliable differences between the two groups prior to medication. Afterwards there was no significant improvement for the experimental group in any of the 9 dimensions. For the control group, however, significant improvement occurred on 3 of 9 scales: Dressing, Personal Hygiene, and Participation in Activity Program. A cross-comparison of the amount of improvement in the experimental group *vs.* the amount of improvement in the control group showed statistically reliable more improvement on one scale, Participation in Activity Program, and a trend toward significantly more improvement in Dressing.

The findings refuted the hypothesis that the combination was superior to trifluor-

mazine alone, as patients receiving both drugs failed to improve, while those receiving the single drug made a significantly better hospital adjustment. Favorable changes in the group receiving trifluorpromazine alone seemed to cluster more on manageability and activity participation as opposed to improvement in interpersonal relationships. The relative superiority of trifluorpromazine would appear to be limited to improvement within the hospital, there being no difference in discharge rates for the two groups one year later.

It would seem that in the treatment of chronic schizophrenics the combination used is not an effective one, and that trifluorpromazine cannot afford sufficient tranquilization, within the dosage range prescribed, to overcome the undesirable effects of the iproniazid.

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CLINICAL AND STATISTICAL EVALUATION OF RESULTS WITH PLEGICIL AY-57062 IN CHRONIC MENTAL PATIENTS

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Acepromazine (Plegicil)⁵ is a relatively new phenothiazine derivative, closely related to chlorpromazine. Its basic properties are very similar to those of chlorpromazine though minor differences were noticed.

The early pharmacodynamic and clinical studies suggest that this drug has essentially the same indications, but it is about twice as active as chlorpromazine and the incidence of serious side effects is very low (2-9).

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Statistical work by M. H. Halbert, Case Institute of Technology, Cleveland, Ohio.

⁵ Plegicil was offered as a courtesy by Ayerst Laboratories, New York City.

SELECTION OF PATIENTS

A true random selection of cases from the entire hospital population was not attempted, instead we used each patient as his own control.

We segregated a group of patients who exhibited the following common traits:

1. Failure to respond to tranquilizing drugs,

EST and psychotherapy. 2. Poor prognosis due to long periods of hospitalization, regression, etc.

The series under study included 12 male and 36 female patients. Their ages ranged from 22 to 61 years. The number of years elapsed since their first admission to the hospital ranged from 1 to 29 years.

The diagnostic categories were primarily schizophrenic reactions, 44 cases. The rest of the group included 2 manic-depressives, manic type; 1 mental defective with psychosis; and 1 patient with chronic brain syndrome associated with alcoholism.

Dosage and Administration. The total length of acepromazine administration ranged from 1 week to 26 weeks. The total amount administered in one course ranged from 0.280 Gm. to 8.080 Gm., the highest daily dosage ranged from 40 mg. to 120 mg.

SIDE EFFECTS

No noticeable side effects were encountered, with the exception of 3 patients in whom the medication had to be discontinued. These 3 patients presented troublesome untoward reactions, manifested by extreme agitation, confusion, shakiness, marked weakness, and unsteadiness.

SUMMARY

Acepromazine was tried in 48 chronic mental patients, 12 male and 36 female. Their ages ranged from 22 to 61 years, and the time elapsed from their first admission in a mental hospital ranged from 1 to 29 years.

The majority of the patients were suffering from various types of schizophrenic reactions, and no significant number of other diagnostic categories was included.

Acepromazine was administered orally for an average of 16 weeks. The highest daily dosage reached 120 mg., with an average of 99.58 mg. The drug *did improve* symptoms and behavior in a significant manner.

Thirty-seven out of the 48 patients showed some improvement; 7 showed no change; 1 patient worsened. The other 3 patients worsened and developed toxic reactions; the medication was discontinued

and the patients were removed from the study.

There was a slight indication that younger patients and those admitted recently were helped more than older patients or those whose first admission was many years ago. There was no significant difference in the effect of acepromazine on various diagnostic categories. There was no relation between the total length of the medication and the degree of improvement. There was a *slight* but not significant indication that a slower increment in dosage results in greater improvement than a faster increment. Two main areas, Psychotic Symptoms and Behavioral Traits, improved more than Intellectual Resources, Character Traits and Interpersonal Relationships, and Socialization and Rehabilitation, but the improvement in Behavioral Traits is not significantly correlated with the improvement in the Psychotic Symptoms.

With the exception of 3 patients for whom the drug had to be discontinued because of toxic reaction characterized by extreme agitation, confusion and weakness, very few side effects have occurred and none was serious. No jaundice or allergic reactions were noted, and a very low incidence of Parkinsonism was encountered. No relation was found between the number or the type of the side effects, including Parkinsonism, and the degree of improvement.

Finally, it was noted that in this series of patients, acepromazine proved effective where other drugs or EST were not and that of the 7 patients who showed no improvement on acepromazine, none had improved on previous chemotherapy or EST.

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CLINICAL RESULTS WITH PHENELZINE

JOHN C. SAUNDERS, M.D., RICHARD W. ROUKEMA, M.D.,
NATHAN S. KLINE, M.D., AND SAMUEL D'A. BAILEY, M.D.¹

Previous reports(1-4) have described the value of monoamine oxidase inhibitors in the treatment of depressed states. The majority of such successfully treated cases have been of the endogenous (essential, true, primary) type; other authors have noted fair to moderate results in treating depressed, withdrawn and catatonic schizophrenics. Still others have used the monoamine oxidase inhibitors in manic-depressive, depressive psychosis, with good results. Psychopharmacologic therapy is most effective for symptomatic indications not on generalized diagnostic entities.

We have employed phenelzine² in depressed patients regardless of diagnostic classification for the past year in an effort to determine the efficacy of the drug in the following conditions:

1. 24 adult, chronic, male schizophrenics characterized by depression and withdrawal.

2. 20 markedly depressed males, some of whom had catatonic-like features.

3. 5 acute, depressed, non-psychotic patients.

4. 12 non-hospitalized, ambulatory depressed patients from private practice.

The average daily dose was 15 mg. b.i.d. or t.i.d. The usual course of treatment was 6 months; the maximum, 9. Some ambulatory, non-hospitalized patients received phenelzine for less than 6 months. When maintenance therapy was required, one tablet daily was administered as indicated.

In Group 1 some improvement was noted in depressive symptoms, thus enabling 3 of the 24 patients to be discharged. The remaining patients, although revealing some improvement in apathy and autistic tendencies, showed no basic change in their schizophrenia *per se*.

In the second group of chronic schizophrenics, activity was increased in every patient: 4 of the patients actually demonstrated agitation, aggressiveness and hostility so that the dosage had to be reduced, and/or a tranquilizer administered.

None improved sufficiently to be discharged but it should be pointed out that phenelzine is not intended as a specific for schizophrenia.

All patients in the third group achieved recoveries from depression within 10-15 days.

The fourth group demonstrated very dramatic results with phenelzine. It should be noted that this drug may be more specifically indicated for use with ambulatory patients where there is some evidence that lower dosage and shorter duration of treatment will suffice.

Phenelzine has shown no evidence of severe side reactions after 16 months' clinical trial. Previous history of liver disease may be a contraindication for phenelzine therapy. However, our patients were subjected to a battery of clinical studies, including thymol turbidity, cephalin flocculation, alkaline phosphatase, A/G, and BUN without significant abnormalities. Occasionally an individual, usually non-hospitalized,

¹ Rockland State Hospital, Orangeburg, N. Y.

² Phenelzine has been supplied as Nardil through the courtesy of Warner-Chilcott Laboratories.

would show mild to moderate postural hypotension ; this was easily managed by bed rest or reduction of dosage. It is our opinion that phenelzine is an effective and useful drug in the treatment of various types of depression. Almost without exception, patients with endogenous (essential, true, primary) depressions responded favorably to phenelzine.

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HISTORICAL NOTES

A NOTE ON PLINY EARLE AND EDGAR ALLAN POE

JEROME M. SCHNECK, M.D.¹

In 1957 two letters by Edgar Allan Poe were brought to the United States and attracted considerable attention. One of these letters had been addressed to H. S. Root. It was considered a rare item with the unusual attribute of possessing the full name of Poe in its signature. This letter made reference to Dr. Earle. In a letter to *The New York Times* I was able to identify the physician as Pliny Earle, one of the most distinguished American Psychiatrists and a founder of the American Psychiatric Association. Poe and Earle had corresponded briefly and Earle's book, *Marathon and Other Poems* was published in 1841. It was pointed out that as his career in psychiatry blossomed, he discontinued writing poetry. Poe's letter reads as follows:

New York
June 28-49.

Dear Sir ;

I regret to say that I am unable to answer your query. I have not seen a volume of Dr.

¹ Clinical Assoc. Prof. of Psychiatry, State University of New York College of Medicine, N. Y. C. Address : 26 West 9th Street, New York 11, N. Y.

Earle's very beautiful poetry for many years and I fancy the edition—(one only was published)—is out of print. The Doctor himself, when I last heard of him, was Superintendent of the Asylum for the Insane, at Bloomingdale, near this city.

H. S. Root Esq^{re}

Very respectfully
Yr. Obed^t S^t
Edgar Allan Poe.

In recent years there appears to have been an increase in interest in the history of American psychiatry. It is worth calling attention to this item now in a psychiatric publication should the Poe letter become less accessible later on when biographical data on Earle may be sought. Additional references to Poe's contact with Earle and to Earle's poetry are available in Pliny Earle's memoirs, edited by F. B. Sanborn.

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ADMINISTRATIVE NOTES

EXPERIENCES IN THE CONVERSION OF A CLOSED TO AN OPEN PSYCHIATRIC WARD IN A GENERAL HOSPITAL

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On the basis of reports of successful open psychiatric wards(1, 2, 3, 4, 5, 7), it was decided to convert the psychiatric ward of the Kansas University Medical Center from a fully closed ward to an open ward. The plan was to devise a gradual method of change so as to minimize resistance or anxiety on the part of personnel and to disrupt other routines as little as possible; and to study the reactions of patients and personnel and to determine whether the change could take place without special facilities, additional personnel, or other modifications.

In planning this project for one year, allowing several months for preparation and gradual changes and a few months of complete open ward operation, it was decided to postpone any changes in admission policy or treatment methods other than those necessitated by the experiment.

The change was made on a 33-bed ward to which all types of psychiatric patients, both voluntary and on court order, were admitted. Most patients remained on the ward from 30 to 90 days. In the absence of hospital grounds suitable for informal recreation and because of the need for patients to be available for diagnostic studies, ward rounds, treatment, and teaching activities, it was not possible for them to go and come as freely as in some open hospitals(8). The patients would remain on the ward without locked doors or restraint, except when permitted to go elsewhere.

Devices which have aided some open hospitals include special organizations and group meetings, additional personnel, and early application of somatic therapies (for example, ECT in the first few hours after admission)(9, 10). It was hoped to defer

such steps, if possible, until it was determined whether the open ward could operate without them.

The advantages of open wards are largely theoretical. Whether they can be proven to shorten hospital stays or to increase rates of recovery cannot be determined without controlled studies of comparable wards. Likewise, an adequate measure of the relative incidence of complications would be beyond the scope of this project. The advantages are thought to include preservation of patients' self-esteem and improved cooperation through the elimination of authoritarianism(3). Improved attitudes of patients' relatives toward hospitalization and favorable changes in the attitude of personnel toward patients have been attributed to open wards.

Possible disadvantages include more patients leaving without permission, increased suicide risks, and acting out behavior. There is some question as to whether locked doors really reduce these risks.

In this experiment the conversion to an open ward was divided into 3 stages. In the first stage the principles underlying the open ward were discussed in meetings with personnel without direct reference to plans for the change and reprints of papers on the subject were circulated. In the second stage a committee was appointed, including a nurse, a staff physician, an occupational therapist, a recreational therapist, and a psychiatric aide. The *announced* purpose of the committee was to plan steps in opening the ward and discuss them with groups of employees. An *unannounced* purpose was to "sell" the idea to committee members and involve them personally in making the project a success. During this stage recreational and occupational therapy areas were unlocked for brief periods and the living room of the ward was unlocked during visiting hours. The third stage consisted of gradually extending the time that areas

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were left open and increasing the number of areas opened. Though the design of the ward would have permitted retention of a small locked area for a few disturbed patients, it was decided to open all portions since if any patient should be "locked up" other patients might fear this.

The attitude of personnel to the progressive changes followed a pattern of (a) initial vague acceptance or skepticism; (b) early hyperalertness and or hypersensitivity to minor incidents; (c) re-examination, inaction, and delay; and (d) ultimate acceptance or rejection. The attitude of the committee paralleled that of individuals. Representative of the period of inaction was a period of several weeks in which the committee had no reportable activity.

Each time a new area was unlocked or the time open increased, personnel were at first allowed to re-lock the areas when they deemed it necessary. This permission seemed to handle the early exaggerated fears of responsibility and made not locking the areas a matter of pride.

Psychiatric aides accepted the change more rapidly than nurses. Employees working in the afternoon seemed slower to accept unlocking than those in the morning. This was explained by a sense of security during the early part of the day when "more people are around," even though a majority of them are not attending patients.

Resistances and misunderstandings in the early phases of conversion included the repeated idea that unlocking of doors meant that patients could go out at any time and that this would complicate the work of personnel in locating patients for necessary activities. Pointing out that patients on general medical wards go and come only by arrangement partially dispelled this idea. The creation of a patient location board with magnetized name plates which could be moved to show the location and activity of each patient helped with this.

Another idea that recurred was that it would be necessary to station guards at the doors. This idea was difficult to eliminate. It returned in disguised form with a proposal for a sign-out desk just outside the ward. At times one would find an aide repeatedly leading a patient away from a

door. The idea of engaging patients, patients and groups in activities near the watching areas was difficult to eliminate.

The attitude of patients was generally favorable to the changes. New patients were more easily encouraged to enter voluntarily.

During the early stages one paranoid patient, who habitually sat near exits and attempted to slip out, noted during occupational therapy that hospital employees came and left without keys. She called the occupational therapist over and asked whether the therapist knew that the door was unlocked. After the situation was explained she abandoned her usual seat by the door and began to participate in occupational therapy.

There was no increase in the number of patients leaving the hospital without permission. With one exception, all patients who left returned voluntarily or were brought back by their families. The one who did not return could have been returned by her family had they wished. No accidents occurred as a result of patients departing without permission. No changes in treatment routines were necessary. Diagnostic studies were completed before treatment. There was no increase in the use of sedation or other somatic treatments. Psychotherapy remained the principle mode of treatment.

No changes in admission policy were necessary. The open ward was explained to those calling about admission of cases who might have had court charges pending or who had presented a run-away problem. This led to two cancellations of admission requests during the year. In one of these, an adolescent with a run-away problem, the possibility of special nurses was considered.

SUMMARY AND CONCLUSIONS

A method of gradual conversion from closed to open ward is described and the reaction of employees and patients is discussed. A closed ward in a general hospital can be opened without additional personnel and without modification of treatment methods or admission policies.

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COMMENT

PHILADELPHIA MEETING HIGHLIGHTS

The 115th annual meeting of The American Psychiatric Association was held in Philadelphia, Pa., with headquarters at the Bellevue-Stratford Hotel, April 27 through May 1, 1959. Business meetings and scientific sessions were held in the Trade and Convention Center. This was the first annual meeting in Philadelphia since 1944, when the Centennial Meeting was held there, and the 12th meeting in the City of Brotherly Love. The first meeting of the Association was held in Philadelphia at the Jones Hotel on October 16, 1844.

The membership was pleased to visit the new psychiatric facilities in the city and especially the magnificent addition to The Institute of the Pennsylvania Hospital, an addition that is worthy of the traditions of its great superintendent and the Association's early president, Dr. T. S. Kirkbride.

Dr. Francis J. Gerty, President, called the Opening Exercises to order at 9:00 a.m. on April 27. The Invocation was presented by the Right Reverend William P. Roberts, D.D., former Bishop of Shanghai. His Honor, Richardson Dilworth, Mayor of Philadelphia, gave a welcoming address to the members. Following the introduction of the President-Elect, Dr. William Malamud, by the President, a number of information reports were read. Presenting his first report as Medical Director, Dr. Matthew Ross emphasized his intention to improve communication within the Association, to come to know the membership better through personal visits and letters, and to promote the welfare of the Association and the profession through the activities of the Central Office. Dr. Walter H. Obenauf, Speaker of the Assembly, noted the achievements and increasing responsibilities of the District Branches. Dr. Theodore L. Dehne, who served as Co-Chairman with Dr. Lauren H. Smith, reported briefly for the Committee on Arrangements. Program Committee Chairman Dr. John Donnelly pointed out special features of the meeting and noted that the program in-

cluded 174 scientific papers and 26 Round Tables. Due to the illness of Dr. C. H. Hardin Branch, the Secretary, Dr. Lawrence Kolb, elected Secretary, *pro tempore* by the Council, announced the official membership count as of March 31, 1959 as 10,420. The Treasurer, Dr. Robert H. Felix, reported a favorable financial condition for the Association. (His complete report will be included in the Annual Proceedings of the Association, to be published in a future issue of the Journal.) Dr. John I. Nurnberger, Chairman of the Hofheimer Prize Board, presented the Prize to Irving L. Janis, Ph.D., Associate Professor of Psychology at Yale University, for research described in his book *Psychological Stress: Psychoanalytic and Behavioral Studies of Surgical Patients*. Dr. Nurnberger commented upon the fact that the last three awards have been made to those with Doctorate degrees in Psychology. The eighth winner of the Isaac Ray Lectureship Award was Dr. Maxwell Jones, eminent British psychiatrist, for furthering understanding between law and psychiatry. As recipient, Dr. Jones will deliver a series of lectures on psychiatry and the law at George Washington University, in Washington, D. C., during the next academic year. The presentation was made *in absentia* by Dr. Frank J. Curran, Chairman of the Isaac Ray Board. Dr. Ross then announced the winners of the Mental Hospital Achievement Awards for the 1958 competition. Following the election of new members by the membership in accord with the recommendations of the Membership Committee and the Council, Dr. Gerty delivered his Presidential Address entitled "The Physician and Psychotherapy."

His address provided a most thoughtful discussion of psychotherapy as a basic treatment procedure in psychiatry and the needs for its wider instruction in the medical schools and amongst practitioners of medicine and psychiatry. Dr. Gerty's great judgment and wisdom were best shown in his consideration of the role of the psy-

chologist in relation to the practice of psychotherapy and the position that might best be held by psychiatrists in fostering the growth of psychotherapeutic practice.

Dr. Malamud, President-Elect, was respondent. The Opening Exercises were closed with a moment of silence in memory of members of the Association who had died since the last annual meeting, and a Memorial to Past-President Edward A. Strecker which was read by Past-President Kenneth Appel.

The second business session was called to order Tuesday afternoon at 2:00 p.m. Dr. John E. Davis, a member of the Board of Tellers, announced the results of the election of officers for 1959-60: Dr. Robert H. Felix, President-Elect; Dr. S. Spafford Ackerly, Vice-President; Dr. Franklin G. Ebaugh, Vice-President; Dr. C. H. Hardin Branch, Secretary; Dr. Addison M. Duval, Treasurer; incoming Councillors: Dr. Calvin Drayer, Dr. Paul Hoch and Dr. A. B. Stokes. Reports were presented by the three Coordinating Committee Chairman; Dr. Frank J. Curran for the Committees on Technical Aspects of Psychiatry, Dr. Wilfred Bloomberg for the Committees on Professional Standards, and Dr. Paul Lemkau for the Committees on Community Aspects of Psychiatry. Dr. Kolb then read a proposed amendment to the Constitution which will be presented to the membership for consideration on the next annual ballot. After a brief recess, the annual Convocation for newly elected Fellows began at 3:00 p.m. with Dr. Gerty presiding. Dr. Lauren H. Smith and Dr. Theodore L. Dehne served as Grand Marshals. An inspiring and scholarly Fellowship Lecture was presented by Dr. Karl A. Menninger, Life Fellow, on the neglected topic "Hope."

The next business session was held on Wednesday morning, April 29, in the Convention Hall Auditorium at 9:30. The Secretary's report to the membership was presented by the Secretary, *pro tempore*, in which he reviewed the major actions of the Council since the last annual meeting. The complete actions of the Council for this period will be published later in the Journal. The Secretary's report was approved by vote of the membership. Dr. Gerty awarded Certificates to the Officers,

Councillors and the Committee Chairmen who were retiring from office at this annual meeting.

On Wednesday evening the Annual Dinner was held in the Ballroom of the Bellevue-Stratford Hotel, followed by dancing.

At the final business session at 9:00 a.m. on Friday, May 1, the actions taken by the Council on April 30 were reported including the appointment of Dr. Paul E. Huston to fill the unexpired term as Councillor for Dr. Addison M. Duval, who had been elected Treasurer, and approval of the Rhode Island District Branch. These actions were approved by the membership on motion from the floor. Dr. William Malamud was then installed in the office of President for 1959-60. He announced the new officers for the Assembly of District Branches as Follows: Dr. Alfred Auerback, Speaker; Dr. John R. Saunders, Speaker-Elect; and Dr. Lester Shapiro, Recorder.

The total registration for the Meeting was 5,104, marking this as one of the largest on record; of this number, 2,540 were members. Approximately 70 science writers and reporters from the nation's leading newspapers and wire services covered the meeting for the public. The Association was honored by the attendance of many psychiatrists and guests from other countries.

The Association is greatly indebted to the able and outstanding leadership of its President, Dr. Francis Gerty, for the highly successful meeting, to his aides and the membership. In particular, great gratitude is due to the splendid program worked out by Dr. Theodore L. Dehne, Dr. Lauren H. Smith, and their colleagues on the Committee of Arrangements, and Dr. John Donnelly and his associates on the Program Committee. Special thanks are due the "Ladies" Committee, with Mrs. John Davis carrying forward their programs admirably. To Mr. Austin M. Davies, the Executive Assistant, Dr. Matthew Ross and Messrs. Robinson and Turgeon and the members of their staff who so courteously and faithfully worked to make this meeting successful, the Association continues indebted.

Lawrence C. Kolb, M.D.,
Secretary, *pro tempore*

HEALTH INSURANCE FOR PSYCHIATRIC PATIENTS

The need for group insurance to cover mental illness as well as the other types of disability that are already provided for in this way has been a matter of serious concern to organized psychiatry, and an experimental plan has now been announced whereby, through the generous cooperation of Group Health Insurance, Inc., an all inclusive coverage may become possible.

The three agencies sponsoring this project are The American Psychiatric Association, The National Association for Mental Health, and the National Institute of Mental Health. The latter, a federal agency, has authorized a grant of \$300,000 for a two-year experimental study. **Additional funds will be supplied by Group Health Insurance, Inc., a non-profit agency, as announced by Arthur H. Harlow, Jr., President of this organization.**

A substantial specified group of G. H. I.

subscribers is being selected with the collaboration of W. F. Dement, professor of statistics at the Graduate School of Business Administration, New York University, for the initial study. Unskilled and poorly skilled workers and their families will make up about half of this group, clerical personnel another 25 percent, skilled workers 17 percent, executives and professional persons 8 percent. Both inpatient and outpatient treatment within stated limits will be covered by the plan.

A committee composed of both psychiatrists and laymen and headed by Dr. Harvey J. Tompkins, Chairman of the New York City Community Mental Health Board and director of psychiatric services, St. Vincent's Hospital, will supervise this new project which marks a conspicuous milestone in the care and treatment of the mentally ill.

ETHICS IN BUSINESS

Late in December 1912 Pierpont Morgan was called to Washington to answer questions of a House Investigating Committee relative to an alleged "money trust" in the United States. Morgan's death three months later, aged 76, was probably hastened by that ordeal.

Q. Is not commercial credit based primarily upon money or property?

A. No sir; the first thing is character.

Q. Before money or property?

A. Before money or anything else. Money cannot buy it. . . . Because a man I do not trust could not get money from me or all the boards in Christendom.

—Quotations by FREDERICK LEWIS ALLEN in
The Great Pierpont Morgan.

CORRESPONDENCE

ROLE OF PSYCHIATRIST IN CRIMINAL TRIALS

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : This is a brief comment on the article "Role of the Psychiatrist in Criminal Trials," by Joseph B. Cumming, in the American Journal of Psychiatry, 115 : 491, Dec. 1958.

I do not take exception to the author's defence of the M'Naghten rule or his doubts about the rule adopted in the case of *Durham v. U. S.*

The author may be criticized, however, for his repeated critical statements about psychiatry and psychiatrists, which he has not supported by a single reference. Here are a few examples :

We are urged, therefore, to give more heed to, if not to be guided entirely by, the opinion of expert witnesses testifying as to the accused's absence of criminal intent (p. 491).

We have been told that the M'Naghten rule is obsolete, being based on outmoded conceptions of human responsibility (p. 492).

The psychiatrists condemn this method of deciding the validity of such defense (p. 497).

The article may be criticized also, for the notion that the defence of insanity is an intimate war between doctors and lawyers, is an example :

May we find an impasse between the two professions that cannot be eliminated. . . the doctors must live with the Law as it is and as it will be changed and reinterpreted from time to time by the bench and bar (p. 496).

Surely the elected legislators have some part to play !

The subject has been treated more adequately by Professor Jerome Hall in his book, *Studies in Jurisprudence and Criminal Theory*. Professor Hall has taken his statements about psychiatrists, chapter and verse, from psychiatric journals and he asserts that more is involved than a contest between psychiatrists and lawyers.

K. G. Gray, Q.C., M.D.,
University of Toronto.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : As requested in your letter of February 4, I am writing to reply to the letter received by you from K. G. Gray, Q.C., M.D., in which Dr. Gray has taken certain exceptions to the position which I took in my article "The Role of the Psychiatrist in Criminal Trials," published in the American Journal of Psychiatry, 115 : 491, Dec. 1958.

Dr. Gray comments adversely on what he calls my "repeated critical statements about psychiatry and psychiatrists, which he has not supported by a single reference." I do not consider that my comments were critical. I was dealing with a controversial subject, one side of which, in general, has been supported by the psychiatrists. This I think I can support by the references which Dr. Gray desires. They will be given later in

this communication. My comments were made on an assumption of an attitude taken by the psychiatrists. Such statements of mine to that effect may have been incorrect, but they were not critical. If my assumption is incorrect, then it would seem that my objection to that attitude would have no validity and, therefore, there is unanimity of views.

If I have correctly assumed the attitude of the psychiatrists toward the Durham rule in contradistinction to the M'Naghten rule, I feel that I am at liberty to point out wherein I believe the M'Naghten rule is the better of the two, without being guilty of the charge of being critical of either the men who hold a different view or of the discipline of which they are members. No practicing lawyer such as I am could possibly consider that he was antagonistic to

opposing counsel who held different views in a legal controversy. I have no more hostile attitude toward a psychiatrist who holds a different view than I have toward a brother lawyer who opposes me in litigation. In fact, rather than being critical of either psychiatry or its practitioners, I confess that I accorded them a deserved praise as I referred, on page 491, to "the great strides and revealing progress in psychiatry which there are now established the means of discovering the nature of man's mental processes, his motives and intents" (p. 491), and, again, when I wrote: "There is justified pride in the accomplishments of psychiatry. Its advancement in the diagnosis, treatment and cure of the mental diseases has brought light to those who sit in darkness" (p. 496).

Dr. Gray in his letter picks what he speaks of as a few examples of my critical attitude. These examples I consider merely an effort on my part to present the contentions of psychiatrists in their consideration of the M'Naghten rule. I undertook to defend the M'Naghten rule, and in order to do so I felt that it was proper for me to present the opposition to the M'Naghten rule, and also to present what I consider the position taken by the psychiatrists as to their ability to testify with reference to the mental condition of a person charged with a crime so that his culpability could be better understood. My effort to present this side of the case is what Dr. Gray considers to be critical of psychiatrists and psychiatry. I would like to quote from certain works on this subject, as Dr. Gray desires that I do, to support my position that most psychiatrists are in opposition to the M'Naghten rule and that they consider that the current method of ascertaining the guilt of a person charged with a crime is unsatisfactory.

Judge Bazelon's opinion (in the *Durham* case) has been hailed by psychiatrists everywhere as a noteworthy advance. This permits the psychiatric expert to think and function in his true professional capacity.

Manfred S. Guttmacher: Why Psychiatrists Do Not Like to Testify in Court, from *The Practical Lawyer*, 1: No. 5, May 1955.

Ten out of the thirty-eight States still follow that of Colburn's later amendment with the M'Naghten rule, and so, in the majority of mental illness as a possible cause for a criminal act. . . . The change was brought about by psychiatrists and I do not suppose that that it is a great improvement. . . . new modes of using psychiatric testimony in regard to criminal offenses.

Thomas S. Szasz: Psychiatric Expert Testimony: Its Current Meaning and Social Function, from *Psychiatry*: 20: No. 3, 313, Aug. 1957.

Psychiatrists who have advocated revisions of the M'Naghten rule have based their claims on the greater knowledge of human behavior gained during the past half century.

Ibid., p. 314.

We, as psychiatrists, are overly fond of taking on problems which we are incapable of treating effectively at the present time. This is particularly true in the field of criminology. The concept of free will in man who is a mentally responsible individual of society is the underlying basis of all criminal law; therefore, if we, as psychiatrists, promote a theory of psychiatry which denies this principle, we are undermining our legal system; thus the ultimate detrimental effect on society is inevitable.

Eric Bell, Jr.: The Basis of Effective Military Psychiatry, from *Dis. of the Nervous System*, 19: No. 7, July 1958.

Dissatisfaction with legal rules and the apparent reluctance of attorneys to modify trial rules and practices governing mental disease and criminal responsibility, amounts almost to a cold war between the two disciplines.

Walter Bromberg and Hervey M. Cleckley: The Medico-Legal Dilemma—A Suggested Solution, from *J. of Criminal Law, Criminology and Police Science of Northwestern University*, 42: No. 6, March-April, 1952.

Nevertheless, it seems to me that there is implicit belief in the minds of most psychiatrists interested in legal matters that the application of psychiatric knowledge to jurisprudence is bound to make the law more "human" and "just," rather than less so. This assumption should not be accepted at face value.

Thomas S. Szasz: Some Observations on the Relationship between Psychiatry and the Law, from *Arch. of Neurol. and Psychiat.*, 7: 298, Mar. 1956.

The methods of procedure are such that I usually leave the witness stand with the feeling that I have not done justice to the side for which I testified nor to the cause of truth nor to myself.

William Alanson White: *The Autobiography of a Purpose*, 192-193, 1938.

When they all individually and jointly (judges, lawyers, and jury) ask me whether the defendant in the dock is in my opinion insane, I must candidly state, if I am to remain true to my professional knowledge and faithful to my oath, first, that I do not understand the question, and, second, that since I don't understand the question, I do not know whether the defendant is insane or not. I admit the situation is embarrassing and puzzling to all concerned, but it is beyond my knowledge and power to remedy or alleviate it.

G. Zilboorg: *Mind, Medicine and Man*, N. Y.: Harcourt, Brace and Co., Inc., 1943.

We have reached a rather disquieting parting of the ways. This is undesirable from both your (the jurist's) point of view and mine. Your rules are unintelligible to me, and my inability to follow them is unintelligible to you.

Ibid. As quoted in *The Mask of Sanity*, Cleckley, St. Louis: C. V. Mosby Company, 1950.

A major underlying fact of the current polemics is the clash of elementary philosophical perspectives.

Jerome Hall: *Psychiatry and Criminal Responsibility*, *The Yale Law Journal*, 65: No. 6, May 1956.

Dr. Hervey M. Cleckley, the author of numerous papers on psychiatry, as well as certain published books (*The Mask of Sanity*, *The Caricature of Love*, and (co-author) *The Three Faces of Eve*), read my paper and wholly approves not only my assumptions as to the attitude of most psychiatrists but my statements as to their support of the Durham rule and antagonism toward the M'Naghten rule. He also supports my position in this controversy.

Dr. Gray's third criticism is that I consider that the defense of insanity "is a private war between doctors and lawyers." I believe the above quotations from Zilboorg, Cleckley, Hall and Szasz adequately support my assumption of the existence of

this conflict. You will recall that in the first draft of my article which I sent you I pointed out that there exist two opposing views on the question of the extent to which mental abnormality should relieve from responsibility for crime. After describing the two opposing views and their protagonists, I stated: "Most of the former are members of the Bar; most of the latter are psychiatrists." This quoted language and the immediately preceding language were stricken in the interest of brevity.

It is not a private war. Members of the Bar, because of their position as officers of the court and their responsibility as professional men in all matters affecting the administration of justice, represent the public interest in all such controversies in the administration of justice. By the same token, I felt free to regard the psychiatrists as the best equipped to speak of the advancements in psychiatry in a matter which made them critical of certain judicial processes. It is a public war, but the champions are those best equipped to represent the opposing sides.

I cannot view the controversy with the alarm that apparently disturbs Dr. Gray. It is through the exchange of opposing views that new ideas are developed. I had hoped that my paper would bring forth opposition to my contentions, since that would give me an opportunity to exchange views with any who took issue with my contentions as expressed in that paper. I have received many letters, which have included more than 50 requests for reprints. Each communication which expressed any views at all was complimentary. Dr. Gray's letter does not take issue with my views, but merely criticizes what he considers a critical attitude. He expressly says that he does not take issue with my defense of the M'Naghten rule. I am still to receive a challenge attacking my beliefs.

Dr. Gray, in conclusion, states: "Surely the elected legislators have some part to play!" I realize that Dr. Gray, being trained in the polity of the British Constitution, where there is not the separation of powers that exists under our system, might not appreciate the fact that the Legislature does not have the right to invade the Judiciary by telling the latter how it should conduct

the trial of cases. I recognize that this is done quite frequently, but there is a strong tendency to permit the Judiciary to handle its own affairs. Legal procedure is not primarily a function of legislative control under the doctrine of the separation of powers. Even if it were a legislative matter, public controversy touching the subject is, as in all such cases, essential to bring forth the strongest arguments for and against any legislative change.

I regret that I have had to answer Dr Gray's letter at such length when you requested a brief reply. You are at liberty to remove such portions as you consider superfluous, though I would like to have Dr Gray read my entire letter. If he wishes to do so, I would like to exchange views with him on the question.

Joseph B. Cunningham
Lecturer in Jurisprudence
Medical College of Georgia

A COMMENT ON "SWEDISH PSYCHIATRY"

Editor, THE AMERICAN JOURNAL
OF PSYCHIATRY:

SIR: In the December 1958 issue of this *Journal*, Prof. Kinberg has made some comments on Swedish psychiatry. As a psychiatrist from Sweden who sought advanced training in America, I feel it is important to correct the impression conveyed to American readers by Kinberg's article.

Kinberg has always tried to promote the Sjöbring view on psychiatry. This view can briefly be described as a magical belief in some kind of correspondence between psychical processes and central nervous system processes. Thus if the psychic processes are rapid, this means that the central nervous system processes are rapid; if a person has stable habits this means that the central nervous system facilitation is stable. If a person does not fit into Sjöbring's system he is said to have a lesion, e.g., in the form of an encephalitis. This is assumed to exist even with complete lack of clinical evidence. No empirical proof of the correctness of this brain mythology is offered, and none is needed according to Sjöbring, because introspection gives us sufficient knowledge regarding the processes in the central nervous system. No therapy can be built on the system, and psychical diseases become essentially untreatable except by the crudest methods. This may be enough to indicate to the reader the value of Sjöbring's speculations.

In his paper Kinberg states "... I followed with interest the publications of Freud as they appeared. When I learned by his '*Traumdeutung*' of foetuses that had been listening to the coition of their par-

ents I lost all interest in his extravagant phantasies" (p. 502). The passage Kinberg believes he is referring to must be the one found on page 399 in Freud's *The Interpretation of Dreams* (Vol. 5, Standard Edition, London, 1953): "A large number of dreams, often accompanied by anxiety and having as their content such subjects as passing through narrow spaces or being in water, are based upon *phantasies* of intra-uterine life, of existence in the womb and of the act of birth. What follows was the dream of a young man who, *in his imagination* (italics mine), had taken advantage of an intra-uterine opportunity of watching his parents copulating." The English version closely follows the original German text. This is only one example of a kind that abound in Kinberg's writings, illustrative of the degree of accuracy and fairness he uses when dealing with psychoanalysis.

Kinberg's statements about causality only being applicable to physical and mechanical happenings, his belief that psychoanalysis can be refuted on epistemological grounds, and his rejection of psychoanalysis as a science, are not valid. They probably rest on older philosophical writings imperfectly understood.

The European professor has an influence on the development of his specialty in his country that American readers can hardly imagine. Kinberg for many years successfully fought the use of the Rorschach Test in Swedish psychiatry, because it demonstrated such queer things in people whom he "knew" to be normal. In 1953, in some articles in the largest daily newspaper in

Sweden, he stated emphatically that dreams have no significance whatsoever, being merely the waste and rubbish of the all-important conscious process. In fact, he rejected the concept of the unconscious altogether. In these articles he reviewed a volume of *The Psychoanalytic Quarterly* (Zilboorg, Szasz, Friedman, Renneker, Roheim) with unfair demagoguery, attempting to ridicule his American colleagues before the lay public.

What can be inferred from Kinberg's paper is the fact that Swedish psychiatry is in a sad state. Kinberg and Sjöbring together are to a great extent responsible for the fact that only about ten psychiatrists in Sweden have had any training in psychotherapy. This means that thousands of men-

tally ill people in Sweden are not receiving adequate treatment, and much needless suffering is thus caused by the influence of these two men.

I have written this short note to indicate to American readers that some Swedish psychiatrists are aware that in Sweden psychiatry has not developed at the same rate as other medical specialties have. A few of us are seeking training at home and abroad in order eventually to try to change Swedish psychiatry, at present so barren and lacking in international contact, and to bring it to a level acceptable by modern standards.

L. Börje Löfgren, M.D.,
Austen Riggs Center, Inc.,
Stockbridge, Mass.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL
OF PSYCHIATRY:

SIR: I decline discussing scientific psychiatric problems with anybody who considers the existing axiomatic correspondence between psychic processes and brain processes as "magical."

The short description of Sjöbring's important scientific findings and comprising psychologic and psychiatric theory is a caricature which I don't care to spend time on.

Dr. Löfgren's contention that Sjöbring and myself are "to a great extent responsible for the fact that only about ten psychiatrists in Sweden have had any training in

'psychotherapy,'" is a great compliment to us, if by "psychotherapy" is meant psychoanalysis. Of course psychotherapy, in its old medical sense, does exist in Sweden as in other civilized countries.

Some days ago I got several important reprints on psychoanalysis from Dr. Henry Turkel (Detroit), which appear to indicate that there is a strong movement on the North American continent against the superstitions called psychoanalysis.

Prof. Olof Kinberg,
Kriminologiska Institutet,
Svartmangatan 9, Stockholm 2,
Sweden.

FREE MEN

What is this Athens, of which all men speak?
They bow to no man and are no man's slaves.

—AESCHYLUS
(The Persians)

NEWS AND NOTES

ASOCIACION PSIQUIATRICA DE LA AMERICA LATINA.—This new Association is a federation of the various psychiatric associations in the Latin American countries. Such an organization had been under discussion for several years and was finally constituted at a meeting in Lima, Peru, October 28, 1959.

The following countries are presently represented in the Association: Argentina, Brazil, Chile, Cuba, Equador, Mexico, Paraguay, Uruguay.

The objectives of the Latin American Association are to promote active exchange of information, to publish a common journal, to establish international co-operation, to organize Latin American psychiatric congresses, and to promote interrelations with other psychiatric associations throughout the world. The board of directors of the Association are: Dr. Gregorio Berman, Argentina; Dr. Pacheco E. Silva, Brazil; Dr. F. Falcón, Mexico; Dr. Carlos A. Seguin, Peru; Dr. José A. Bustamante, Cuba.

PATIENT'S BILL OF RIGHTS.—The National League for Nursing, at the opening of its biennial convention in Philadelphia, May 11, 1959, presented a "patient's bill of rights" which had been developed by more than 3,000 people meeting in hundreds of sessions throughout the country over the past two years.

The statement is a seven point "bill," as follows: The patient has a right to expect:

1. That he will receive the nursing care necessary to help him regain or maintain his maximum degree of health.

2. That the nursing personnel who care for him are qualified through education, experience and personality to carry out the services for which they are responsible.

3. That the nursing personnel caring for him will be sensitive to his feelings and responsive to his needs.

4. That, within the limits determined by his doctor, the patient and his family will be taught about his illness so that the pa-

tient can help himself, and his family can understand and help him.

5. That plans will be made with him and his family, or if necessary for him, so that, if possible, continuing nursing and other necessary services will be available to him throughout the period of his need. These plans will involve the use of all appropriate personnel and community resources.

6. That nursing personnel will assist in keeping adequate records and reports and will treat with confidence all personal matters that relate to the patient.

7. That efforts will be made by nursing personnel to adjust the surroundings of the patient so as to help him maintain or recover his health.

ILLINOIS PSYCHIATRIC SOCIETY.—On April 15, 1959, the following members of the Illinois Psychiatric Society were elected to office for the year 1959-60: president: Dr. Frances Hannett; president elect: Dr. Joel S. Handler; secretary-treasurer: Dr. Paul E. Nielson; councillors: Dr. Nathaniel S. Apter and Dr. C. Knight Aldrich.

Serving their 3rd year of a 3-year term are Delegate to American Psychiatric Association Assembly: Dr. John R. Adams, and Alternate Delegate, Dr. Isadore Spinks.

SURVEY OF SALARIES IN PSYCHIATRIC CLINICS AND HOSPITALS.—The Des Moines Child Guidance Center has completed "A Salary Survey of Salaries for Professional Positions in Psychiatric Clinics and Hospitals (1959)." Based on a nation-wide sample, the study describes salary levels and ranges in relation to training and experience requirements. The report includes comparisons based on the Center's 1955 study, showing the nature of shifts in salary levels in the intervening 3-year period.

To obtain this pamphlet write to Des Moines Child Guidance Center, 500 Garver Building, Des Moines 9, Iowa. Price, single copy, 25c; 10 or more copies, 15c each.

DEATH OF DR. DEJARNETTE.—A delayed report of the death, at the age of 90, of Dr.

Joseph Spencer DeJarnette of Staunton, Va., recalls the significant part he played in Virginia psychiatry. Graduating from the Medical College of Virginia in 1888, he joined the staff of Western State Hospital, Staunton, in 1889 and later became superintendent. He was also founder and superintendent of the DeJarnette Sanatorium, and he was instrumental in the founding of the Lynchburg Training School and Hospital at Colony, Va., of which he was the first superintendent.

Through his efforts the Virginia Sterilization Law was enacted in 1924. This was the first sterilization law to pass the Court of Appeals of the United States.

Dr. DeJarnette had served as president of the Augusta County Medical Society and of the Medical Society of Virginia. He was a life Fellow of The American Psychiatric Association of which he had become a member in 1909.

THE DEVEREUX DINNER PROGRAM.—This annual feature of Convention Week, generously provided by the Devereux Schools, was held Monday evening, April 27 at the Benjamin Franklin Hotel, Philadelphia. The capacity of the ball-room was taxed by the dinner guests of Miss Devereux and her staff, and following the banquet entertainment was provided by well trained groups of students from the various classes of the Schools. There were songs, dances and marches and highly amusing numbers reminiscent of the old minstrel show days that did credit to the performers and rounded out a delightful evening preparatory to the strenuous days and evenings to follow.

DR. CAMERON HONORED.—The Postgraduate Center for Psychotherapy, New York City, which offers the Ruben award annually for outstanding achievements in mental health, presented the award for 1959 to Dr. D. Ewen Cameron. At the presentation made in New York City on April 17, 1959, Dr. Cameron was cited for "the tremendous contributions you have made in research and as a teacher in the field of psychiatry."

THE PROBLEM OF STUTTERING.—Wendell Johnson, Ph.D., professor of speech pathol-

ogy and psychology at the University of Iowa, himself a former stutterer, has written a booklet *Toward Understanding Stuttering*, published by the National Society for Crippled Children and Adults.

Written especially for parents, the 40-page publication is a revealing study of more than 25 years of extensive and intensive research in stuttering problems.

Copies may be obtained by writing the Easter Seal Society, 2023 West Ogden Ave., Chicago 12, Ill. Price, 25c.

DR. WILLIAM CONE DIES.—With the death of Dr. William Cone of Montreal, May 4, 1959, Canada lost one of her most eminent neurosurgeons. His age was 62. A native of Iowa, he came to Montreal in 1928 to join the staff of Dr. Wilder Penfield at the Neurological Institute of McGill University, and rapidly advanced to the post of professor of neurosurgery. He was also associate professor of neuropathology.

In World War II Dr. Cone was one of the first Canadian medical men to go overseas. He and Col. Colin Russell organized the No. 1 Canadian Neurological Hospital and he served that institution as chief neurosurgeon.

In Montreal he established a helicopter delivery service whereby patients could be landed on the McGill University football field close to the Neurological Institute in order to secure the quickest possible treatment in emergency neurosurgical cases.

Dr. Cone was devoid of self-consideration in his devotion to his work. He was preeminent as an operator and innovator and teacher.

SOUTHERN REGIONAL EDUCATION BOARD GRANTS TO MENTAL HOSPITAL PERSONNEL.—Grants have been awarded since June 1958 to enable employees of mental hospitals and training schools in the Southern region to study care and treatment in institutions anywhere in the country. Awards up to \$500 are made to cover expenses for a period of 4 weeks or less. Grantees have gone to many different institutions in 22 states and Canada. Florida, 3 grants; Kentucky, 9; Louisiana, 10; Maryland, 5; North Carolina, 15; Oklahoma, 16; South

Carolina, 5; Tennessee, 2; Texas, 16; Virginia, 18; West Virginia, 1.

Funds for the two-year grant program were provided to the SREB by the National Institute of Mental Health. Applications are being accepted until June, 1960. For further information write to Dr. Penningroth, Southern Regional Education Board, 130 Sixth St., N.W., Atlanta 13, Ga.

WHITNEY M. YOUNG, JR. RECEIVES HIGH SOCIAL WORK AWARD.—Whitney M. Young, Jr., Dean of the Atlanta University School of Social Work, Atlanta, Georgia, received the 1959 Florina Lasker Award from Clara A. Kaiser, Chairman of the Award Committee.

The award of \$1,000 and a scroll noting the outstanding welfare accomplishments of Mr. Young were made at the National Conference on Social Welfare, held in San Francisco, May 24-29.

Mr. Young's "vigorous, wise and unafraid leadership" in the field of desegregation and civil rights for Negroes was cited by Dean Kaiser as a factor in the Committee's decision to honor him.

AWARD TO DR. GREENACRE.—Phyllis Greenacre, M.D., New York City psychoanalyst and clinical professor of psychiatry at Cornell University School of Medicine has received the 1959 Charles Frederick Menninger Award of the American Psychoanalytic Association. The Award is given annually for outstanding contributions to the theory and practice of psychoanalysis. Dr. Greenacre is known particularly for her psychoanalytic interpretations of Jonathan Swift, Thomas Mann, and Lewis Carroll. She has also made important contributions to the understanding of child and personality development. The Award is named in memory of the father of Doctors Karl A. and William C. Menninger, the well known psychoanalysts of Topeka, Kansas.

TRANSACTIONS OF THE FIFTH ANNUAL MEETING OF THE ACADEMY OF PSYCHOSOMATIC MEDICINE.—Transactions of this meeting titled, "The Psychosomatic Aspects of Internal Medicine," are available from

Dr. Wilfred Dorfman, 1921 N. 4th Ave., Brooklyn 26, N. Y., at \$3.00 per copy.

KEINISCH PSYCHOATHOLOGIE. The author of this book (Prof. Kurt Schneider, Heidelberg), reviewed in an earlier edition, *Am J Psychiatry*, p. 256, Sept. 1958, is now brought out a fifth revised edition, 1959, published by Georg Thieme Verlag, Stuttgart.

It is an excellent guide in concise form, the text running to only 161 pages.

ASSOCIATION FOR RESEARCH IN NERVOUS AND MENTAL DISEASE, INC. The annual meeting of the Association for Research in Nervous and Mental Disease will be held on December 11-12, 1959, at the Hotel Roosevelt, New York City. The subject of the meeting will be "Mental Retardation."

For further information write: Dr. Rollo J. Mueselink, Secretary-Treasurer, 700 West 168th St., New York 32, N. Y.

MILBANK MEMORIAL FUND.—The Milbank Memorial Fund has published a 104 page brochure of the proceedings of its 34th annual conference, 1957, Part II, entitled "Planning Evaluations of Mental Health Programs." It contains a progress report of the Evaluation Planning Groups' efforts to identify specific types of mental health programs which might lead to reductions in the amount of specific mental disorders, and the proposal of a Model for a project to prevent mental disorders in an aged population. The book also contains a synthesis of the discussions and suggestions, by Conference members of the proposed Model.

The book may be obtained from The Milbank Memorial Fund, New York. Price, \$1.00.

ADOLF MEYER MEMORIAL AWARD.—Dr. Herman B. Snow has been designated this year to receive the Adolf Meyer Memorial award for his outstanding work as director of St. Lawrence State Hospital in respect to the development of the open door policy.

The presentation was made at special ceremonies held at the New York Academy of Medicine in New York City, May 2, 1959.

BOOK REVIEWS

NEUROPHARMACOLOGY: TRANSACTIONS OF THE SECOND CONFERENCE. Edited by *Harold A. Abramson*. (New York: Josiah Macy, Jr. Foundation Publication, 1956, pp. 308. \$4.25.)

The transactions of the second conference on neuropharmacology of the Josiah Macy, Jr. Foundation consists of records of five discussions, each one led by an invited discussant and joined in by the rest of the invited group in accordance with the usual procedures of these conferences. Aurelio Cerletti analyzed the effects of LSD, chiefly on animals, its ability to evoke a rise of temperature and other signs of autonomic stimulation such as dilatation of pupils, piloerection, salivation, lacrimation. In addition, ataxia and paresis are produced. Though the accompanying anxiety may be secondary to the physical state, yet the use of chlorpromazine can suspend the anxiety part of the syndrome, but not the neurological aspects. BOL, a brom derivative of LSD, does not bring on hallucinations yet it blocks serotonin actively even more strongly than does LSD. Stephen Sherwood's presentation is concerned chiefly with behavioral effects following intraventricular injection of drugs into animals and man. These results may be attributed to structures in the lining of the third ventricle. The injection of cholinesterase improves psychotic patients and also exerts a good effect on the thought processes. Banthine also makes patients more active but has little effect on these thought processes. It is clear that direct injection of substances into the ventricle opens a new method of attack in this field, but the results are not always the same as those of peripheral injection. Humphry Osmond gives a delightful talk on work in which he was not only an observer but also an experimental subject and could, therefore, speak both from objective and subjective viewpoints. He presents the development of the ideas which induced his group, including Hoffer and Smythies, to study the effects of psychotomimetic drugs: their ability to produce changes in thinking, mood and perception. It was emphasized that these alterations are different from the toxic confusional illnesses characterized by unawareness of the immediate environment. It is realized, however, that there is a continuum between the two types of mental disturbances. Max Rinkel presents chiefly a review of work in which he was associated. Studies of behavior in 43 normals

showed that LSD tended to evoke hostility, withdrawal, and desire for reassurance. An interesting analysis is made of the productions of a painter before and at various periods after the administration of LSD. The drawings showed a progressive, almost schizophrenic-like deterioration. The changes in the thought processes, mood and perception are thus graphically presented. The last discussion was led by Harold Abramson, who stresses the rapid development of tolerance to LSD, and that LSD given repeatedly is its own best antidote. On the basis of these observations, he presents the hypothesis on the mechanism of schizophrenia, namely: 1. That there is a substance analogous to LSD involved in schizophrenia which he designates as P; 2. That P has some normal function in the physiology of the emotional processes but the metabolism of P is disturbed by schizophrenia; and 3. That the substance P is regulated by a mechanism similar to that for the development and loss of tolerance to LSD. Taken altogether, we have in this book a compendium of views of investigators from many different fields, all focused on problems concerned with the relation of psychotomimetic drugs to behavior. It is a welcome addition to our library.

H. E. HIMWICH, M.D.,
Galesburg, Ill.

METHODOLOGY OF THE STUDY OF AGEING. Ciba Foundation Colloquia on Ageing. Vol. 3. (Boston: Little, Brown and Co., 1957, pp. 202. \$6.50.)

This book, a series of papers by extremely well qualified persons, reports some observations of studies made on ageing and the techniques to be used for further research on this problem. A few samples will give some idea of the interesting and speculative material presented.

In the first chapter, A. Comfort attacks the theories of senescence which base the loss of vigor in old age on "a single 'fundamental' or 'inherent' cellular, chemical, or mystical process common to all multicellular animals, contrasting with the extremely ill-named 'immortality' of protozoa . . ." The pattern of senescence may differ much in various mammals, and it is still to be determined whether all vertebrates undergo senescence.

François Bourliere discusses functional age changes and the fact of physiologic differences in the ageing of various kinds of animals

and senescence as a fundamental characteristic of animals. He considers it highly significant "that these mammals which have a poor temperature regulation and a normally low rate of metabolism are precisely those whose life-span is far longer than that of other mammals of similar size." He also reports observations showing that a low calorie diet may increase the life span.

F. Verzar points to a number of changes "of the proteins of cells and tissues which lead to the decreased capacity of the aged individual to adapt himself to the constant changes in conditions of life." He also considers the "continuously increasing capacity of the tissues to bind calcium" as possibly due to defects in protein metabolism.

This book should be read by all students of gerontology.

K. M. B.

GENERAL TECHNIQUES OF HYPNOTISM. By André M. Weitzenhoffer. (New York: Grune and Stratton, 1957, pp. 460. \$11.50.)

The general techniques referred to in the title of this book pertain to those associated with production of hypnotic phenomena in general. As the author who is a psychologist states, these contrast with specialized techniques relevant to certain fields of application, such as psychiatry. Coverage is broad, but the book is too long and detailed. A major aim is to offer the student a "working understanding of hypnosis and hypnotic phenomena." Extensive inclusions incorporate data from scientific, quasi-scientific and non-scientific sources. The experienced clinician or investigator should be able to judge these sources and, of course, he has less need for this volume. The novice would have difficulty in differentiating relative merits of material included, yet he would be expected to benefit most. The book, nevertheless, can be useful to the new student provided he can become more firmly grounded in his area of practice by participation in high quality courses of instruction and by reading specialized textbooks. The experienced practitioner may find this volume helpful as a supplementary source of reference in his hypnosis library.

JEROME M. SCHNECK, M.D.,
State University of New York,
College of Medicine, New York City.

SIX CHILDREN. By Estelle J. Foote, M.D. (Springfield, Ill.: Charles C Thomas, 1956, pp. 317.)

The writer accounts for her work as psychiatrist in a traveling school clinic for a period

of 9 years. Presentation of her chapters on the "Quick thinking child," the "Slow thinking child," the "Child whose brain has been injured," the "Child maladjusted emotionally," the "Child of unusual cultural background" and the "Child of unusual training" is not in keeping with scientific principles since the writer does not support her many claims and conclusions with statistical evidence. The experienced reader will find it difficult to accept the many generalizations offered. The chapter on the brain-injured child lacks a definition of "brain injury." One wonders whether the "quick thinking" child has a mental capacity within the upper range of normal variations of human intelligence, or has a superior intelligence, or is of the genius classification of intelligence. Many readers will find the chapter on the "maladjusted child" confusing since no definition is offered. "Maladjustment" seems to include all neuroses and even psychoses. Psychometric tests are not defined. However, it seems that only the Stanford-Binet test has been applied. Psychodiagnostic techniques are not mentioned at all. The psychiatric approach is descriptive. The bibliography is very spotty with emphasis on publications 30 years old. The book has historic value.

PETER W. BOWMAN, M.D.,
Powder, Me

THE ORGANIC PSYCHOSES: A GUIDE TO DIAGNOSIS. By John G. Deegan and William B. Spaulding. (Toronto: University of Toronto Press, 1958, pp. 170. \$5.95.)

In his foreword Doctor Aldwyn Stokes sets the tone for this book when he notes that sometimes in clinical psychiatric practice it appears as if the problems of organic psychoses have been "given up" rather than "taken up." Unfortunately, this statement is all too true, as many hospital officials will testify. Seemingly, the designation "organic" in many instances brings with it a loss of interest, particularly in the young clinician. To be organically mentally ill, what is it but to be organically mentally ill?, to paraphrase the Bard.

It was in order to unravel some of the problems which the organic mental illness presents, that this small monograph was written. The authors, in undertaking the task, stress the fact that they have no intention of minimizing the role of the psychological or social forces in mental illness and they pay due homage to both of these. Parts I and II of the work describe briefly the illness from an etiological standpoint and set forth the distinguishing laboratory and clinical features. The information presented in these chapters is not exhaustive

and it makes no pretense to be all-encompassing. Where further details would be required, satisfactory references to various textbooks and journals are enumerated.

Part III of the volume elaborates the various practical applications to clinical cases. Beginning with a discussion of the clinical investigative approach and elaborating upon the diagnostic orientation, there follows a consideration of delirium, dementia, and then a discussion of functional mental illness associated with physical disease involving the brain.

The last chapter enumerates the various technical procedures necessary, the specimens required, the tests and the norms to be looked for.

In general, the book accomplishes its stated purpose as a guide to the diagnosis of organic psychoses. It should be a useful addition to the library of the student, the resident, the psychiatrist and the internist.

FRANCIS J. BRACELAND, M.D.,
Hartford, Conn.

THE GUILTY AND THE INNOCENT. My Fifty Years at the Old Bailey. By William Bixley. (New York: Philosophical Library, Inc. Aberdeen: The Central Press, 1958. pp. 176 + ill. \$6.00.)

The author of this book was for 50 years a supervisory official of the Central Criminal Court in London. After his retirement in June 1956, he decided to give an account of what he had seen and heard in that famous criminal court during the past half-century.

But before doing so he outlines the history of the Old Bailey and of that western corner of London where for centuries past justice had been dispensed. Here stands the present Central Criminal Court which dates from 1834. Included in this description the author gives examples of the horrid and barbarous punishments of the old days—hanging, drawing and quartering, boiling alive, cutting off the hands, branding, slitting the nose, pressing to death. Judge Jeffreys sentenced Titus Oates to 2,000 lashes, during the last few hundred of which the prisoner was unconscious.

The author also describes the infamous racketeering by the keepers for supplying "prisoners' comforts," a euphemism for "bare necessities" which could not be obtained if the prisoner had no money.

All these barbarities and abuses were before the days of Elizabeth Fry and Queen Victoria.

After giving some account of notorious Old Bailey criminals before his time—Captain Kidd

(whom he rechristens James although he was William), Jonathan Wild, Earl Ferrers—the author devotes the remainder of the book to his observations, recorded more or less sketchily but including considerable detail, of notorious prisoners he had known. These included Dr. Crippen (at whose trial the forensic expert Dr. Spilsbury began his notable career), William Joyce (Lord Haw Haw), Klaus Fuchs (atom bomb spy who got off much too easily), Neville Heath (sex pervert-murderer), Ronald True (drug addict, murderer, sentenced to death but reprieved as insane and sent to Broadmoor), and numerous others.

The author takes us through a veritable chamber of horrors, and then apologetically explains that he has displayed "only a minute fraction" of the cases he could have reported from his fifty years at the Old Bailey.

An index would greatly increase the usefulness of this book.

C.B.F.

DREAMS AND THE USES OF REGRESSION. By Bertram D. Lewin, M.D. (New York: International Univ. Press, 1958. \$2.00.)

It is a pleasure for every student of dream-psychology and of the history of science to read this small book. It was written by the most skilful and—*horrible dictu*—most intuitive among the now living workers in the field of the science and art of the interpretation and theory of dreams.

Besides the 1957 Freud Anniversary Lecture with the above title delivered by Dr. Lewin before the New York Psychoanalytic Institute, this small volume contains a list of all Freud Anniversary Lectures since their inception in 1951, a biographical note on Dr. Lewin, and a list of his publications from 1926 to 1955 numbering 36.

The title is thus phrased to recall Ernst Kris who first coined the term "Regression in the Service of the Ego." The author's aim is to show that the dualistic view of Descartes, his distinction between the observing mind, "*res cogitans*," and the observed world, "*res extensa*," corresponds to what we find in an "ordinary well-projected dream." At the beginning of scientific thinking Heracleitos around 500 B.C. "repudiated the dream." He recognized that in the dream we turn away from reality into a world of our own, that what we perceive in dreams, is not a reality. If we want to correctly observe reality we must eliminate as object of observation not only dream consciousness, but also the waking consciousness from our thinking. This view has since been held valid by scientists as most recently con-

firmed, among others, by Schroedinger.

It then seems paradoxical at first sight when we have to admit that Descartes was most decidedly influenced in forming his theories by three dreams he dreamed on the night of November 10, 1619. It seems strange that a dream experience may have determined his view of the world. As Lewin puts it: "The stone the builders rejected may have become the cornerstone." Those dreams were conceived by Descartes to be of divine origin. He believed that the Angel of Truth had descended upon him and confirmed his newly developed hypothesis that the physical world can be completely formulated in mathematical terms, a scientific conception of overwhelming import.

The author gives some general observations about different types of dreams which are of special interest to analysts. He gradually leads up to the conclusion which he finds corroborated by P. Federn's ideas on the role of the ego in dreams ("mental ego feeling"): that in dreams which successfully fulfill their function of protecting sleep the dreamer's role corresponds exactly to Descartes' "res cogitans." The dreamer is just an observer. Whatever is disturbing his sleep he succeeds in projecting into the outside. His own body feeling is eliminated, he stands as "res cogitans" against the outside world, the "res extensa," which includes his projected body feelings.

This is demonstrated by the report of Descartes' three dreams, the first two of which were failures as far as the protective function of the dream is concerned. Finally Descartes succeeds and falls into tranquil sleep. The author conjectures, and well might convince the reader, that the bodily disturbance in this case was "in some sort related to migraine or a convulsive condition."

The subtleties and details of the dreams and of Lewin's interpretations cannot, of course, be given here. These finesses have to be read and studied carefully to be appreciated and enjoyed.

The paper abounds in brilliant and interesting ideas which surround its main body like delightful embroidery and testify to the broad scholarship and esprit of the author. To publish this lecture in book form fits it as a proper setting fits a gem.

In parenthesis: It is gratifying to find the correct spelling "scopophilia" used here, a rare event in psychoanalytic publications. While it may appear picayunish to mention this, to this reviewer it conveys the feeling that the author really knows what the words he uses mean and where they come from. It would have been

even more gratifying if the name of the psychoanalyst, Dr. Theodor Reik, were spelled correctly, too.

JENNIFER LEWY, M.D.
LEWIS A. LEWY, CLINICAL

HERMAPHRODITISM, GENITAL ANOMALIES AND RELATED ENDOCRINE DISORDERS. By Howard W. Jones, Jr. and William W. Scott. (Baltimore: Williams & Wilkins, 1958. pp. 456. \$16.00.)

This is the most valuable monograph on its subject since the appearance of Hugh Houghton Young's now classic monograph in 1915, *Genital Abnormalities, Hermaphroditism and Related Adrenal Disorders*. In the 24 years which have elapsed since that remarkable work, much progress has been made in the understanding of the etiology and treatment of abnormalities of sexual development. Much new light has been thrown on the factors controlling sex differentiation. The determination of chromosomal sex has become an important means of finally answering questions as to genetic sex. There have been many advances in biochemistry which have helped toward the better understanding and treatment of such conditions as the adrenogenital syndrome, and not least the psychological understanding of psychosexual orientation, its growth and development has assisted to advance the treatment of disorders of sex.

There is an excellent first chapter on "The origin of the concept of hermaphroditism in Greco-Roman Culture," which is most interestingly illustrated with Greek and Roman works of art. Chapter 2, by Alfred Jost on "Embryonic sexual differentiation, embryology, physiology, abnormalities," is a short statement of the facts of embryological and genetic development with the emphasis on the endocrine regulation of sexual development. Chapter 3, by the senior author, deals with "The Criteria of Sex. The nomenclature and classification of hermaphroditism," and the remainder of the book deals with literally every aspect of the subject in a clear and authoritative manner. Every surgical corrective and exploratory procedure is abundantly and clearly illustrated. In Chapter 6, Harry F. Klinefelter gives a description of Klinefelter's Syndrome, brought up to date. This condition is a most interesting end-effect of embryonic eccentric development, upon which recent discoveries in cytology have thrown a critical light. In Chapter 21 John Eager Howard with the assistance of Claude J. Migeon, illuminatingly discuss "Cushing's Syndrome," and in

Chapter 22 John G. McAtee discusses "The radiological diagnosis of adrenal tumors."

There are 18 pages of references in double-column; a most splendid and detailed index of case reports; and a good subject-index concludes this admirable book.

ASHLEY MONTAGU, Ph.D.,
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MENTAL SYMPTOMS IN TEMPORAL LOBE EPILEPSY AND TEMPORAL LOBE GLIOMAS. By *Torsten Bingley*. (Copenhagen: Ejnar Munksgaard, 1958. pp. 151.)

This is a statistical study of 90 cases of temporal lobe epilepsy and 253 cases of temporal lobe gliomas from the Serafimerlasarettet, Stockholm. Dr. Bingley is consultant in psychiatry and psychology in the neurosurgical clinic of this hospital. His series consists of consecutive temporal lobe tumors in patients over the age of 10 from Prof. Olivecrona's service during an 11 year period. The cases of temporal lobe epilepsy were patients admitted to the hospital with a diagnosis of epilepsy—any type—over a 3 year period in whom an EEG focus was found in the anterior part of one or both temporal lobes; 16 of these were subsequently found to have gliomas. Most of the work that is presented concerns the epileptic group. All were examined psychiatrically by Dr. Bingley and psychologically by either him or the clinic's psychologist. The psychiatric evaluations are expressed in relatively simple and not "psycho-dynamic" (the quotes are the author's) terms. The psychological tests are directed at measuring attention and concentration, memory, intelligence, and cognition.

The presentation of the author's own work and his discussion about it actually constitutes less than a third of the entire text. Most of the remaining manuscript is given over to an historical and critical review of the various topics: concept of temporal lobes epilepsy, handedness and brainedness, mental symptoms of temporal lobe tumors, ictal mental symptoms in temporal lobe epilepsy, and inter-ictal symptoms in temporal lobe epilepsy. The author attempts to define as accurately as possible the various factors he has studied. It is in this connection that he delves at considerable length into the subject of handedness and brainedness.

There are a number of facets to his conclusions which he summarizes quite well. In essence, he found: 1. The most common mental syndrome of tumors of the dominant temporal lobe is emotional bunting (this may be

independent of any aphasia or increased intracranial pressure) whereas in non-tumorous cases, particularly where there is a bilaterally shifting EEG focus, the most prominent personality change is an "ixophrenic" syndrome characterized by mental "adhesiveness" and sometimes associated with paranoid trends; 2. Both verbal and non-verbal impairment occurs in dominant lobe lesions and in lesions with bilateral shifting EEG foci but not in recessive lobe lesions.

The author really provides no new information although he adds considerable support to certain ideas that others have arrived at with less rigorous methods. His approach to his topics is commendable and this alone makes the monograph worth reading. It is unfortunate that no projective techniques were employed; these may well have added quantifiable data concerning certain psychological aspects of epilepsy and temporal lobe disease which have been commented upon by others but actually have been quite poorly studied.

To this reviewer, the most interesting aspect of this monograph is the historical and critical (sometimes a little harsh) reviews of the various subjects. Though not always complete, they touch upon most of the main points, are concise and well thought out; they certainly emphasize the large amount of non-critical work that has been published in these fields.

WALTER J. FRIEDLANDER, M.D.,
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THE BRAIN AND HUMAN BEHAVIOR. Edited by *H. C. Solomon, S. Cobb, and W. Penfield*. (Baltimore: Williams & Wilkins, 1958, pp. 564. \$15.00.)

This volume reports the proceedings of the Association for Research in Nervous and Mental Disease held at New York December 1956. The high standards of the preceding 35 volumes of the Association are maintained in its 36th. The subject, as the trustees of the Association realized, was a very broad one, and it was therefore wisely decided to limit its discussion to a consideration of the separate areas of the brain from the standpoint of our knowledge of these areas in relation to behavior. Each paper is followed by the report of its discussion. The papers represented are as follows: Lashley, Cerebral Organization and Behavior. Greenblatt & Solomon, Studies of Lobotomy. Denny-Brown & Chambers, The Parietal Lobe and Behavior. Bruner, Neural Mechanisms in Perception. Lacey and Lacey, The Relationship of Resting Autonomic Cyclic Activity to Motor Impulsivity. Penfield, Func-

tional Localization in Temporal and Deep Sylvian Areas. Bickford, *et al.*, Changes in Memory Function Produced By Electrical Stimulation of the Temporal Lobe in Man. Miller, Psychological Defects Produced by Temporal Lobe Excision. Chapman, Studies of the Periamygdaloid Area in Relation to Human Behavior. Gibbs, Abnormal Electrical Activity in the Temporal Regions and its Relationship to Abnormalities of Behavior. Green, *et al.*, Behavior Changes Following Radical Temporal Excision in the Treatment of Focal Epilepsy. Jasper and Rasmussen, Studies of Clinical and Electrical Responses to Deep Temporal Stimulation in Men With Some Considerations of Functional Anatomy. Hoch, Psychoses Producing and Psychoses-Relieving Drugs. Evarts, Neurophysiological Correlates of Pharmacologically Induced Behavioral Disturbances. Woolley, Serotonin in Mental Disorders. Feldberg, Behavioral Changes in the Cat after Injection of Drugs into the Cerebral Ventricle. Bremer, Physiology of the Corpus Callosum. Roberts, Functional Plasticity in Cortical Speech Areas and the Integration of Speech. Nielson, Cerebral Localization and the Psychoses. Halstead, Some Behavioral Aspects of Partial Temporal Lobectomy in Man. Wolff *et al.*, Highest Integrative Functions in Man During Stress.

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EXTERNAL COLLIMATION DETECTION OF INTRACRANIAL NEOPLASIA WITH UNSTABLE NUCLIDES. By G. M. Shy, R. B. Bradley, and W. B. Mathews, Jr. (Baltimore: Williams & Wilkins Co., 1958, pp. 144. \$7.00.)

This is a report of 18 months' experience and 179 scans done at the National Institutes of Health. The first part of the monograph is essentially a manual which describes the authors' search for various types of collimators, the rather detailed characteristics of their apparatus and matters concerning the choice of an isotope. The tenor varies from a technical discussion to a very basic outline of which dial to turn when. The second portion of the monograph discusses some of the clinical aspects of this examination; this includes topics dealing with the characteristics of both the normal scan and scans in cases of tumors in various locations as well as other types of pathology e.g. carotid artery thrombosis, abscess.

The authors reach the conclusion "... that this technique approaches the usefulness of air contrast studies ... (but has the additional

advantages of ...). The monograph is a pleasant introduction to the subject of the localization of intracranial lesions. The authors discuss the physical properties of isotopes, the properties of collimators, and the properties of the brain in response to the scan. The monograph is a pleasant introduction to the subject of the localization of intracranial lesions and it is of interest to those working in the field.

This monograph is not a product of a systematic examination of the literature, but it is of interest to those working in the field.

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REHABILITATION: A COMMUNITY CHALLENGE.
By W. Scott Allan. (New York: John Wiley and Son, 1958, pp. 247. \$5.75.)

This book has value for the general reader, the student, and also for the professional worker in the field of rehabilitation. The author's aim is to stimulate individual or community thought and action toward more realistic and effective rehabilitation services. On the whole it has a humanitarian and perhaps somewhat of a utopian flavor. Nevertheless to contribute to the development of a society of justice, health, opportunity and security are basic, and fundamental toward which all men aspire.

The book comprises a total of 247 pages including more than 370 bibliographic references. The foreword, contributed by Dean W. Roberts, M.D., Executive Director for Crippled Children and Adults, points to the present day necessity for marshalling and integrating local resources, not only for ministering to the needs in the rehabilitation fields, but for an appropriate local level orientation to the subject matter.

This view is substantiated and enlarged upon by the author's discussion of the responsibilities of a community in planning, acting, and supporting measures for the rehabilitation of the handicapped and disabled. He gives consideration to the developing concepts of an interdisciplinary approach to rehabilitation; to the nature and availability of facilities and personnel; to budgetary sampling, to staff patterning, and to cash experiences.

He includes also a discussion of the impact which social laws, health insurance, medical care plans, social legislation, workmen's compensation benefits, and pre-paid health insurance may have upon the ultimate pro-

ductivity and welfare of the injured, handicapped and disabled. The closing chapter deals with various areas of challenge that may serve as "guide lines" for future plans and action in the broad field of rehabilitation.

W. L. T.

THE NEUROSES AND THEIR TREATMENT. Edited by Edward Podolsky, M.D. (New York: Philosophical Library, Inc., 1958. pp. 555. \$10.00.)

In this volume of 37 papers by various authors, Dr. Podolsky places side by side greatly differing attitudes and approaches. The articles range from the immediate and pragmatic to the speculative and hypothetical, bearing in mind that pragmatism for one reader is speculation for the next. There are included papers on infancy and childhood, adult neuroses, psychosomatic illnesses, problems of occupational neurosis, aging, post-partum anxiety states. Several papers discuss diagnostic issues, many involve aspects of psychotherapy, while 8 are devoted to treatment by drugs, carbon dioxide, and lobotomy.

Owing to the differences among the articles themselves, it is impossible to offer general statements about the subject matter presented. A number of authors do give the impression that they regard neurosis as a discrete entity which can be delineated in classical medical terms, subject to a "course," a "natural history." In his foreword, the editor states, "Neuroses are essentially conditioned anxiety reactions. Their emergence is automatic once they have been conditioned. They persist until the conditioning has been overcome by relevant emotional retraining processes."

One regrets the absence of papers especially devoted to the concept of neurosis *per se*, of anxiety, the role of anxiety in emotional growth and character formation as well as its role in growth deviations, the concept of need for object relationships, the use of symptoms to maintain such relationships. These areas are dealt with to a certain extent in several articles, such as Spitz's two papers on infancy, and in the fascinating report of "The Psychoanalysis of a Case of 'Grand Hysteria of Charcot' in a Girl of Fifteen," by Dr. Lydia G. Dawes; the concept of object relationships and the reaction to primary object loss (loss of "self") is implied in Dr. Shands' noteworthy study of cancer patients, "An Outline of the Process of Recovery from Severe Trauma."

The Neuroses and their Treatment is apparently designed for the "physician in active

practice." This reviewer believes that many of the articles are either too technical in language or too experimental in content to be readily assimilated into the non-psychiatric physician's practice. Derived from a number of psychiatric and medical journals, the articles do not have their formerly appended bibliographies, nor are there complete bibliographic citations to the original articles themselves. There is no index.

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MUSIK IN DER MEDIZIN. Beitrage zur Musiktherapie. Edited by H. R. Teirich, M.D. (Stuttgart, Germany: Gustav Fischer Verlag, 1958, pp. 199. DM 22,—.)

This anthology is divided into 4 parts, informally and without special designation or headings. However, by the contents of the contributions, the following trends can be ascertained: the first part contains most of today's theories and concepts in music therapy throughout the world, starting from ancient times and presenting, in its third chapter, the "Development of present Trends of Music Therapy in America" (Illing and Benedict). The second part deals with the physiopathological aspects of music's impact on the human being. Brain waves, psychosomatics, and electromyographic methods and their interaction with music are explored (Destunis, Deebandt, Stokvis (the editor of *Acta Psychotherapeutica*) and Traenkle). The third part is the largest and primarily devoted to therapy. Dreikurs (Chicago) describes music therapy with psychotic children, Martha and F. Bruner-Orne in Massachusetts illustrate the application of "English hand-bells in a psychiatric clinic," the editor of this anthology presents a valuable contribution of music therapy in private neuropsychiatric practice (with a wealth of scholarly research), and Wendt of the Karl Marx-University in Leipzig compares music and sleep therapy. In its fourth part, the book presents contributions by Dr. P. J. Moses of San Francisco investigating "musical elements in the voice of neurotics," and the editor's wife, Dr. H. Teirich-Leube, speaking of "Rhythm in the Gymnastics in Therapy." Since at least half a dozen of the contributors are American psychiatrists and psychologists, and since the frame of reference is extremely broad and often new and stimulating, the book appears to be most valuable and, hence, most welcome.

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IN MEMORIAM

HANS W. GRUHLE

1880-1958

With the death of H. W. Gruhle in October 1958 at the age of 78, German psychiatry has lost one of the most independent and stimulating workers, a very successful teacher of the highest academic standing and a productive and critical writer in many fields of psychiatry. To understand his work and its far-reaching influence a few data of his life are of interest : He started his career as a psychiatrist under Kraepelin in Munich in 1904, but soon went to Kraepelin's earlier Clinic in Heidelberg where he spent the most fruitful years of his life. In 1933 he was removed from his academic position by the Nazis together with the holder of the chair and all other teachers at the Psychiatric University Clinic. For over 12 years he was in academic exile being in charge of 2 small mental hospitals in the country ; but he returned after the downfall of the Nazi regime in 1947 to the chair at Bonn University which he held till his retirement.

Like his teacher Kraepelin, Gruhle was convinced of the importance of *psychology as a basic science* of psychiatry ; but he freed himself early from the dependence on Wundt's association psychology. In a number of detailed studies on psychiatric symptomatology he applied ideas of contemporary psychologists such as Külpe, Stumpf, Müller and Bühler in psychopathological problems. In 1922 he wrote a small tract *Psychologie des Abnormen* in which he developed his own concepts in this field. His approach was and has remained phenomenological and descriptive ; but his refined and discriminative analysis e.g. of schizophrenic symptoms, has remained unsurpassed. The most original contributions to the problem of delusions ("Wahn") of this century are probably those of Gruhle. His attitude towards the various psychological schools can, perhaps, best be seen from the fact that he joined as co-editor the journal *Psychologische Forschung* mainly devoted

to "Gestalt"—psychology, but nevertheless remained towards this school as to all others also, the critical and independent worker on his own. For a number of years he held a lectureship in psychology, besides being associated professor of psychiatry, at Heidelberg University instructing teachers and educationists, but also had honour students in psychology.

The second branch of psychiatry in which Gruhle can be considered a pioneer was that of its *social aspects* and its relation to criminal and asocial behaviour. As early as 1911 he described the social implications of mental disease and pleaded for the need of special care for the family of the patient in hospital, at the time when Adolf Meyer conceived his idea of the psychiatric social worker. Gruhle's investigations of young offenders in an institution (1912) created the pattern for a sequence of similar studies of border problems between criminology and psychiatry. With the Heidelberg colleagues he founded and published a sequence of typical life histories of criminals ("Verbrechertypen"). Up to his death he was busy with a new edition of a famous text on forensic psychiatry.

Under Franz Nissl, at the time professor of psychiatry, a group of eminent young psychiatrists, among whom Gruhle played an important rôle, gathered at the Heidelberg Clinic before the first World War : they were Wilmanns, Homburger, Kronfeld, Jaspers, Wetzell, all from Kraepelin's school, and a number of younger workers who joined this circle later and were not less influenced by Gruhle's critical enthusiasm. In fact, his sharp and cool criticism was one of the most valuable assets of psychiatry in Heidelberg, and elsewhere. Jaspers once called him the living conscience of German psychiatry. He was a fearless fighter for what he considered scientifically honest and truthful and took

counterblows in debates and controversies with admirable charm and ease, without personal rancour.

His *chef d'oeuvre*, written during his exile from academic life, *Verstehende Psychologie* (Psychology of Understanding) (1948) represents an attempt at establishing psychology and psychopathology by methods outside the natural sciences—and to develop these methods in applying them in the psychology of language, style, handwriting, works of art, history, law and of

living itself. Its broad concepts and comprehensive insights will probably be a fruitful influence in discussions on the principles of psychological science for generations to come. A collection of Gruhle's shorter writings was published by himself in 1953 (*Verstehen und Einfühlen*) giving a clear picture of his lucid style and his mode of thinking. They would certainly deserve of an English translation.

W. Mayer-Gross, M.D.

SOURCES OF UNCERTAINTY IN STUDIES OF DRUGS AFFECTING MOOD, MENTATION OR ACTIVITY

ERWIN L. LINN, Ph.D.¹

INTRODUCTION

It has been difficult to specify the effects of many drugs. A review of the literature shows that this is particularly true of those drugs intended to change mood, mentation or activity. The central concern of this paper is to indicate some of the ways in which the characteristics of subjects and the social setting may obscure the determination of the effects of these kinds of drugs. Other questions of study-design—e.g. sample size, techniques of biological assay, and timing of dosages—will not be discussed.²

DRUG-EFFECTS : DEFINITIONS

Primary or intended effects.—A drug may have numerous effects but it is usually studied or administered for a particular effect expected. For example, reserpine "calms" hyperactive mental patients; it also lowers the blood pressure of hypertensive medical patients. Opiates reduce the pain of terminal cancer patients but also alleviate the withdrawal sickness of addicts.

Side-effects.—Side-effects are all effects other than the intended or primary effects. It is obvious that if the primary use of a given drug varies, so do the side-effects. What is side-effect to one intended use may be primary effect to another. For example, lowered blood pressure is a *side-effect* when reserpine is given with the expected effect of calming a mental patient but a *primary effect* when the same drug is prescribed for a patient with hypertension.

Side-effects are dependent on (a) the dosage and (b) whether treatment is single or continuous. It seems very difficult to limit drug-effects to one organ or area,

particularly as dosage is increased. When high dosages of chlorpromazine are used side-effects are not only wider in range but more serious(8, 9³); with continued use, most side-effects have been reported to disappear.

PROBLEMS OF INFERENCE FROM DATA ABOUT DRUG-EFFECTS

If the intended use of a drug is to change mood or mentation, the major source of information on its effects may be the subject's report of what he experienced. Even if the drug seems to achieve an easily and objectively recognized main effect, the observer, in arriving at knowledge about how a drug works, often depends on the subject's ability to understand and to verbalize his reactions. Moreover, while observable changes may provide a valid index of drug-effects, investigators may err in inferring subjective changes corresponding to these external signs(22). For example, agitated depressed patients who seemed calmed by chlorpromazine may still be contemplating suicide(1).

Thus, the subject's interpretation may be of considerable importance to defining and understanding specific drug-effects. If so, it behooves us to consider some of the influences upon what the subject perceives and reports.

First, of course, the subject's interpretation of drug-effects varies according to his "morbid state." The opiates have one meaning to the addict but another to the terminal cancer patient in extreme pain.

Experiences with *other* drugs, with which a drug new to the subject's experience can be compared, will color his reactions and what he tends to tell the investigator. For instance, among mental patients, it has been noted(11) that addicts given mescaline, unknown to them, report its effects as similar to opiate drugs, whereas alcoholics compared it to a "hangover."

The *continuing* experience with the same

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² The writer is grateful to Dr. J. Cochin and Angelica S. Goffman for their critical comments about this paper.

drug may alter the subject's reaction and interpretation of drug-effect. Only to the extent that he learns what to expect, can he arrive at some set evaluation(10):

The mescaline stress produces much less reaction with succeeding experiences. We felt in the past that this might be due to such vague factors as "tolerance" or absence of any specific emotion-laden material. However, the first mescaline experience becomes a point of reference. It has been integrated as an experience and can serve as a basis for future exposures to the same stress without producing the emotion-laden discharge of the first time.

It has been argued that continued voluntary use of marihuana and addiction to opiates depend on the predictability of certain effects(3, 24). Moreover, knowing the range of possible effects through experience may lead to "psychological tolerance" of side-effects, especially when the subject greatly desires a major effect. For instance, the drug addict may find side-effects such as itching and vomiting pleasurable accompaniments to morphine injection(38).

The personality characteristics of subjects may necessitate a qualified interpretation of observed or reported effects(37). For example, some investigators have questioned the "normality" of the volunteer subject(20). One investigator has interpreted negative results with reserpine and chlorpromazine as due to an underlying "passivity" in the mental patients so reacting(33). A corollary to this idea of personality structure affecting drug-reaction is the hypothesis that addicts tend to select the drug of addiction (*e.g.*, alcohol, opiates) according to their personality needs(39).

Something which has been more systematically studied is the "placebo reaction" (21, 36). Moreover, some subjects have been demonstrated to be "placebo-reactors" or "placebo non-reactors," that is, reacting or not reacting to continued as well as to initial placebo because (it is assumed) of some underlying personality characteristics. In one study of drugs to relieve headaches, the placebo-reactors were inferred to have a different kind of headache than the non-reactors(18) :

If subjects never report relief through a pharmacologically inactive substance but always

report at least some attacks relieved through bona fide analgesics, it must be assumed that they represent a "pure culture" of physiological headaches not accessible to suggestion, while the . . . subjects who either always or most of the time responded to placebo represent, perhaps predominately, psychogenic headaches and to some extent also milder physiological headaches coupled with a tendency toward suggestibility.

Social background may also influence reactions to drugs or placebos, though we have found no such reference in the literature. Differences by ethno-cultural background in the manner in which pain is expressed by neurological patients and its meaning to them have been reported(41). We would expect, therefore, that ethno-cultural difference may be important at least to differences in pain relief from analgesics. Also, since hospitalized mental patients are disproportionately drawn from the lower socio-economic level of the population(7), such subjects' limited education may of itself interfere with their understanding of their reactions to drugs or with what the investigator would consider satisfactory reporting of such reactions.

It can never be taken for granted that the subject's perception and reporting reflect a direct pharmacological action of drugs which are intended to change mood, mentation or activity. For example, there is some evidence that the opiates reduce anxiety about pain(4, 5) as well as increase the pain threshold. Mescaline, lysergic acid and pervitin, in bringing about alterations in perception and body sensation, which seem to be physiological actions, may lead to anxiety, uncertainty, and, at times, rage, which may be psychological reactions not directly resulting from the physiological action of the drugs(17). Similarly, some of the side-effects of chlorpromazine and reserpine may have special meanings to mental patients with certain symptomatology, leading to anxiety and tension(27, 33, 40).

For drugs such as mescaline or lysergic acid, the jarring of the normal or the usual is the very thing the investigator wants to learn about, but this effect may hamper the subject's ability to perceive or understand his reactions and to communicate. Such

difficulties have been aptly summarized (34) as :

(1) Blockage—the absence of associations ; (2) "Subvocal flight of ideas"—too many associations occurring at once ; (3) "Mental ataxia"—the subject tries to communicate but there is a discrepancy between what he says and what he means to say ; (4) Expressive introversion—the subject becomes so pre-occupied with his images and hallucinations that he neglects to communicate at all ; alternatively he may *think* he has done so when in fact he has said nothing ; (5) "Mystical thinking"—vague statements about "Time," "Reality," "Truth," etc.

On the positive side of the ledger, probably more will be learned about the tranquilizing drugs than about electro-convulsive or chemically-induced convulsive therapies because patients can describe the improvement that takes place during chlorpromazine or reserpine treatment, whereas the former therapies impaired the memory (26).

Finally, the social setting of the treatment may become important to the subject's interpretation of drug-effects. Since the social setting has wider ramifications to the determination of drug-effects than just influencing the subject's interpretation, it will be discussed more fully below.

THE SOCIAL SETTING

All research and therapy with drugs take place in some social setting. The extent of social participation is influenced by whether treatment is with a private physician or under institutional auspices, the kind of subject, and the continuity in time of the therapy or research. Mutual participation of subjects and staff varies from outpatients, in occasional contact with staff and just waiting room contact with each other, to mental patients, confined in a constant potential of contact with fellow patients and attendants.

Normal subjects, former drug-addicts or mental patients are often brought together for the experimental use of drugs intending to change mood, mentation or activity. What this grouping means to the subject must be seen in contrast to the world from which he has come. The mental patient may be most affected by the transfer to an

environment devoted to treatment and research rather than to custody (13). For example, in one study, 39 out of 48 patients brought to a ward for drug treatment showed improvement prior to the inception of drug treatment (31). Another writer (2) has claimed that

any attempt to observe a form of behavior in our patients has often led to a change in that form of behavior. We have found it to be most marked with regard to aggressive behavior and its immediate consequences but it has also applied to other forms of behavior. We have several times seen patients hide the evidence of their incontinence when an experiment was in progress who had never been known to do so before.

When subjects are brought together but introduced to the therapy at staggered times (19), knowledge about drug-effects may be gained from those already in treatment. In research at the National Institutes of Health we found that normal volunteers developed a ward "folk lore" about drugs they were given and tended to label unknown drugs, as, for example, "the stuffy-nosed one" (which turned out to be chlorpromazine). Similarly, comments of patients recorded in the nursing notes of a mental hospital indicate that insulin and electroshock had their "reputations" among mental patients as do the current crop of tranquilizing drugs.

The dramatic effect that certain drugs have can intensify the communication about them. The orthostatic hypotension caused by chlorpromazine, the hallucinations caused by LSD, the gaiety caused by dexedrine : these create experiences which particularly for normal subjects are sharply distinct from the usual behavior patterns of their group.

Probably more influential than verbal exchange is what is witnessed directly. An extreme side-effect such as jaundice may be a statistic of one out of a large number of patients treated with chlorpromazine but the number of others apprehensive because they witnessed this side-effect is not limited to one.

Equally important may be staff day-to-day experiences with the drug. With chlorpromazine or reserpine, the initial trials in particular may alarm the mental hospital

staff if cases of dermatitis, jaundice, and Parkinsonism occur, and this alarm may be communicated to patients. In one study, is a specific part of the research design, the staff was reassured about side-effects (35). Eventually, the staff gains a sense of ease about the drug as they learn the range of effects and some means of handling unpleasant side-effects.

When subjects who have been brought together are treated with the same drug, there is the possibility of a heightened effect due to their having a similar reaction at the same time. We are all familiar with how the "mood" of the group may be heightened by the effect of a specific drug, alcohol, and how then, in turn, the alcoholic effect may be re-inforced by the "mood" of the group. What happens when one subject receives a drug with an *opposite* effect from that of other drugs administered to other subjects is being investigated (30):

Cooled up with, say the egotistical benzedrine partner, the withdrawn, indifferent dramamine partner and the slightly bored lactose man, the second subject reports that he is distractible, dizzy, drifting, glum, defiant. . . . This is not the report of mood that we got when all four men were on secondal.

Then there is the question of what is considered "proper" social behavior in a group of subjects. Drug reactions which make the subject feel irritated with others may be suppressed or not admitted, whereas being pleasantly disposed or "high" may be expressed without stepping too far away from social controls. Normal volunteer subjects observed by the writer were reluctant to admit that they became irritated by a drug, eventually identified as chlorpromazine. They did talk about such feelings, if asked, and two or three wrote up detailed descriptions about how they tried not to express such feelings.

Standards of behavior may also be pertinent to what kinds of behavior become contagious. If some mental patients are given drugs and as a result behave in an "improved" manner, the more accepted behavior may be taken over by others (23). These types of changes are possibly similar in kind to those, already mentioned, noted to occur even prior to treatment when patients are brought to a ward preparatory

to the experimental use of drugs. The contagion of desirable behavior has also been noted in another context (15). Incontinent patients brought together with continent patients for occupational therapy gradually decreased their incontinent behavior until it "no longer constituted a problem during the daily hour in the clinic. It recurred, however, when the patients returned to their wards." A central problem is why desirable behavior becomes contagious if drugs are effective and why the undesirable behavior is not an effective counter-influence to the drug action. Perhaps this is a matter of shared values (the socially desirable behavior being shared), or is a matter of numbers (the successfully drug treated group being larger). The problem of social contagion of desirable behavior is further complicated because its opposite is known to occur—e.g., *folie à deux*, mob behavior, dancing manias (16).

Perhaps it is not so much that drug-induced behavior is socially contagious as that it produces a different environment for all patients, including those not receiving the drug. For instance, if chlorpromazine or reserpine reduces the hyperactivity of some patients, it thereby reduces the provocative incidents to which other patients are exposed (6, 12, 35, 40).

If patients improve, staff attitudes towards patients change, and staff has more time for activities other than controlling patients. These changes in staff attitudes and activities will affect the subsequent behavior of all patients, whether they are treated or not (25, 29). Even existing staff attitudes about a drug prior to its use can prove a sharply distinguishing predictor of whether or not patients improve when treated (14).

Finally, for confined patients, a distinction must be made between symptoms that are psychiatric—i.e. reflect pre-admission etiological dispositions and represent a continuing personality malfunctioning—and symptoms that are due to adjustments and reactions to being institutionalized. For example, chronic mental patients have exhibited sexual reactions under the influence of mescaline. These were interpreted in psychiatrically dynamic terms (11). However, it is equally plausible that the sexual

reactions to mescaline resulted from the restriction on sexual life inherent in the confines of the mental hospital.

RELEVANCE OF THESE OBSCURING CIRCUMSTANCES TO STUDY-DESIGNS

Though the foregoing is not a complete catalogue, we can conclude that drugs used to change mood, mentation or activity are given under many conditions which obscure the determination of drug-effects. These have been arbitrarily divided to permit ease in our discussion, not because they can be usually isolated in therapy or research. The question now arises: What can be done in drug research to control or eliminate these obscurities?

Anyone who has seen subjects given a high dosage of drug is well aware that drug-effects seem to be the only important thing occurring and that the setting or the type of patient exerts no or little influence. With lesser dosages, these other factors seem more important. However, the pattern of importance varies. For example, the mood of the group, if it is similar to the mood created by the drug, may obscure the drug-effect. If the subjects are chronic mental patients, the apparent poverty of patient interaction may lead us to question the importance of group influence.

Nevertheless, one must watch what one is taking for granted. For example, we know that high dosages may engulf the potential influences of some of the obscuring circumstances discussed. However, it is usual, at least in treating mental patients with the tranquilizing drugs, to begin with low dosages, which are gradually increased. During the initial period of drug treatment, at least, dosage may be secondary to the treatment setting as a determinant of changes in patients. Chronic mental patients may not speak much to each other but the reports about changes in such patients when brought to a ward for treatment, even prior to the treatment, and about the effect on untreated patients of social contagion, decreasing provocative behavior, and staff attitudes would indicate that lack of social interaction cannot be taken for granted.

Double-blind procedures with control and experimental groups are clearly neces-

sary if definitive, unbiased results of what a drug does is to be obtained(32). Since there are perhaps more obscuring circumstances than can be recognized or eliminated, it is only reasonable to attempt to have the control, untreated group exposed as similarly as possible to the same circumstances as the treated group(35).

It is not reasonable to claim, as has been done, that placebos are silly because side-effects can be recognized. This certainly is not always true. There are placebo responses and these could be taken to be the effects of the true drug. The effects, main or side, from the drug itself are usually not found in all patients and some have no reaction at all. There is the additional problem of placebo-reactors but these could be eventually identified and analyzed separately.

During continued use and higher dosages, drug-effects may become pronounced enough for recognition of the drug-treated patients. Yet, the controlled study under these circumstances is still more valid in its results than the judgments from clinical trials in which all subjects are given the drug to be tested. Knowledge about drug-effects is not spread equally among the persons concerned, especially in initial trials of a new drug. Doctors, through already published material and their prepossession with clinical or research experiences, may know of cues that distinguish the drug under study. Least in knowledge about such cues would be the subjects themselves, if we may exclude from this discussion the sophisticated drug-addict. Therefore, even a double-blind study may not eliminate the bias of staff knowledge about drugs, but it still may eliminate the bias of the subjects' knowing whether they are receiving drug or placebo. Perhaps no better argument can be made than that expressed after a 73 day double-blind study of reserpine(28):

... at the conclusion of the experiment, no one was able to assess better than by chance who was given the drug. . . . The importance of the double-blind structure was additionally illustrated by what happened to the ratings of patients once their identity became known. Thirty days after the end of the study proper, patient identity having been divulged to, the

raters, 100% of the experimental group was rated as significantly improved on one of the scales.

If drug induced behavior affects the non-treated through social contagion or through changing the environment the differences between treated and non-treated patients will consequently be diminished. This could veil an appreciable effect of a drug. Some of the problems of setting can be eliminated by having experimental and control subjects scattered over many wards so as to diminish the potential influences of witnessing or communicating about drug-effects, or of benefiting socially from improvements in other patients.

Sometimes the attempts to regulate interfering variables have further complicated the possibility of evaluating the drug. For instance, with the tranquilizing drugs, there are many reports of the clinician making day-to-day judgments during the study about toxic effects and or patient improvement and thereby varying the day-to-day dosages. Yet, if the purpose of the study is to evaluate the tranquilizer, this varying of dosages for each patient means incorporating into the process of study criteria of side-effects and or main effect that are to be used eventually to gauge the drug. Thus, the study comes not only to be an evaluation of the drug's effectiveness but also an evaluation of the clinician's judgments during the study. It is furthermore complicated by each patient having a different series of treatment.

SUMMARY

Research on the effect of drugs, particularly those affecting mood, mentation, and activity, is complicated by a number of obscuring factors. Many of these complications seem inevitable in terms of the nature of the drugs or the available subjects. Until some of these complicating factors can be documented as inconsequential, investigators must try to randomize their potential effects or to take explicit account of them in the research design.

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DIFFICULTIES OF COMPARATIVE PSYCHIATRY : THE FIJI ISLANDS¹

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This discussion is intended to illustrate the serious difficulties which arise, even under favorable conditions, in making studies in the field of comparative psychiatry (sometimes called social, ethnic, or cultural psychiatry). Because such studies are becoming increasingly influential not only in psychiatry, but also in psychological, sociological, and economic circles, it is desirable for comparative psychiatrists to be especially rigorous in considering their findings, and to avoid making unwarranted or gratuitous interpretations.³

The Fiji Islands are a particularly favorable area for the study of comparative psychiatric epidemiology because of the completeness and reliability of the archives and because psychiatric censuses of the whole population were taken in 1911, 1921, 1936, and 1946. They offer the additional demographic advantage that the present population of 333,000 (1954) is almost equally divided between two inbred groups of different racial and cultural backgrounds. This population consists of 42.9% Fijians and 45.1% East Indians, the other 9.0% being made up of Europeans, part-Europeans, Chinese, and other Pacific races (1).

An epidemiological ideal would postulate the determination of the "true prevalence" of a given condition. This would require (a) definitive diagnostic criteria, (b) the testing of every individual in the population, (c) by competent technicians, (d) at the same instant. In the Fiji Islands this has been approximated in the filariasis survey by the clinical and hematological examination of almost 50% of the Fijian population of 143,100 (1954) over a 10

year period. In this case requirements (a) and (c) have been categorically met while (b) and (d) require statistical correction.

In the case of psychiatric illnesses, however, difficulties arise in all 4 respects. There are no pathognomonic criteria, and the classical position that they can be defined relative to the local culture is open to question (2). Even in highly sophisticated communities, medico-legal opinions show that radical differences of viewpoint may occur. The second requirement of comprehensiveness has been met in several places in the South Pacific, officially in Fiji by the census-taker and unofficially elsewhere. The third requirement of obtaining enough qualified diagnosticians is almost insurmountable in dealing with any sizeable population, even one as small as the 8,700 Hutterites studied by Eaton and Weil (3). So far there is no report in the psychiatric literature in which requirement (d), simultaneity, has been met.

The deficiencies of informal screening are demonstrated in two neighboring islands in the South Pacific, each with an equally well-qualified, British-trained medical officer, who in effect took periodic "complete medical censuses" of their populations through their staffs of visiting nurses and through personal tours. One M. O. stated that except for a few senile dementis his island was free of gross psychopathology, while the other said that he was sure that on his island there were many psychotics in the villages whose condition was concealed from the authorities. The first M. O. had been sent out from England, the second was a native-born white with an intimate acquaintance of his fellow-citizens.

PREVALENCE

With these qualifications in mind, the census figures for the Fiji Islands may be considered. In the 1946 census, the question relating to psychiatric problems was similar to that asked in previous years, and read as follows :

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State the name of any person in this dwelling or establishment who is (a) Totally blind, (b) Nearly blind, (c) Dumb, (d) Lunatic, imbecile, or feeble-minded.

This question was printed on the census form in English, Hindustani, and Fijian. The following is a summary of the available figures for the censuses of 1911, 1921, 1936, and 1946. There is a breakdown for 1911, but none for the later years. The first 3 columns give the actual figures, the last 3 the rate per thousand.

	1911(4)					
	Total	Indians	Fijians	Total	Percentage Indian	Fijian
	27	11	8	0.2	0.3	0.1
Lunatic						
Imb. &						
Feeble	216	71	131	1.5	1.7	1.5
Total	243	82	139	1.7	2.0	1.6
	1921(5)					
Total	162	103	39	1.0	1.7	0.5
	1936(6)					
Total	176	130	33	0.9	1.5	0.3
	1946(7)					
Total	298	196	90	1.2	1.6	0.6

In epidemiological terminology, these figures constitute *prevalence ratios*, which measure the proportion of the population which exhibits a phenomenon at a particular time(8). Since every individual in the population was "tested" almost simultaneously, they approach the ideal in regard to criteria (b) and (d), comprehensiveness and simultaneity. But there are serious conjoint defects in regard to criteria (a) and (c), diagnosis and competence. The criteria are not stated and the "technicians" were lay census-takers and the families of the afflicted. The distinction among English speakers between "lunatic" and "imbecile" must take on a retroactively increasing vagueness in the various census years, and the exact connotations in each village of the Fijian equivalents ("lialia" and "yalolevu") can never be known. Nevertheless, with all their defects, the Fijian census figures are probably the best available for any non-Caucasian indigenous population.

Disregarding the distinction between "lunatics," "imbeciles," and the "feeble-minded," since accurate diagnosis is too much to expect from village people, the sense of the figures is that the prevalence of psychiatric disorders in the Fiji Islands

fell between 1911 and 1921, and remained fairly constant for the next 25 years.

These tendencies are significant because they run counter to popular beliefs about the etiology of psychiatric disorders. If this array is accepted at face value, such disorders were more prevalent in the horse-and-buggy, pre-industrial, pre-tourist, pre-World War I days than they have been in the later era of automobiles, industry, "cultural contamination," World Wars, and changes in the economic system. The constancy of the prevalence ratio in the last 4 censuses is just as impressive in this respect as the initial fall, and may also indicate a certain reliability in the figures. There is no indication that in this "island paradise" "things were better in the old days," when it was actually, from an American and European point of view, more of a paradise in many ways.

Comparing the two major segments of the population, there is relatively little variation in the figures for East Indians, with a greater fall in the prevalence ratio among Fijians. Yet it was the Fijians who experienced the greater cultural, social, and economic changes as the decades went by(9), all in the direction usually considered by sociologists and anthropologists, as well as by the laity, as "harmful." The most obvious change was in the direction of relinquishing instinctual freedom, because cannibalism, widow murder, and certain sexual customs were forbidden(10). Up to the time of the cession of the Islands to Great Britain in 1874, the indigenes were said to be literally eating each other up, so that in 1946 cannibalism was still a family matter, in the sense that a percentage of the very old had either partaken of it, or personally observed it, or had had relatives eaten; and among the younger groups, a proportion had had parents or grandparents with a similar personal experience of cannibalism. A parallel may be drawn with the institution of slavery in the United States, whose relics still influence social behavior and seem to offer a screen for psychopathological acting out in some cases.

The census figures indicate that counter to current expectations, the so-called "stress of modern life" and all that it implies has

had either no effect on the total prevalence of psychiatric disorders in the Fiji Islands, or an effect opposite to the anticipated one.

INCIDENCE

The incidence rate is defined by epidemiologists(8) as the number of events in the population at risk during a specified time, compared to the mean population at risk during that time. A "true incidence" rate would require (a) that every possible case be accurately diagnosed, and (b) that the time of onset of each case be accurately determined. In the case of psychiatric disorders, it is unlikely that these criteria will ever be met except in regard to certain toxic conditions. In general, the difficulties of diagnosis are complicated not only by such factors as the psychosomatic and sociopathic problems, but by the problem of the "cut-off point," when to call something an idiosyncrasy, and when to call it a disorder. As for the "time of onset," in most cases this can only be stated in a superficial sense which few clinicians would accept; this is an impractical requirement for any population beyond the number undergoing intensive psychotherapeutic study and those suffering from toxic psychoses.

The only practical compromise is to ascertain how many cases are brought to the attention of competent diagnostic authorities during a specified period. In practise, this means totaling first admissions to hospitals and clinics, and also, if sociopaths are included, first offence convictions for significant crimes.

Unfortunately this system gives an approximation so rough as to be almost without value for epidemiological purposes, since it appears that first admissions to clinics and hospitals in a given locality do not indicate either prevalence or incidence, but rather the quality and quantity of the facilities available and the local attitude toward psychiatric treatment. The tendency is to fill good facilities as rapidly as they are provided and public opinion permits(2). The only instances known to the writer where public facilities regularly have vacancies is where those facilities are markedly below standard, as in Haiti, or formerly, in French West Africa. In applying the formula for incidence rates to

hospital figures, it would be more satisfactory to take the "event" observed at face value. This event is the admission of a patient to a hospital, and the usual "incidence rates," accurately interpreted, reflect only the tendency of mentally ill people to arrive at a hospital and not the prevalence or incidence of mental illness. In the Fiji Islands, because of the small numbers involved (ranging from 15 in 1911 to 61 in 1954), the admission roster of the Government Mental Hospital, taken by itself, is of little value.

RACIAL DIFFERENCES

A more vigorous approach, open to methodological criticism but useful in practice in view of the difficulties encountered with other approaches, is an attempt to answer the question: "What proportion of each of the two predominant races exhibited gross psychopathology during a given year?" These ratios will be denoted by the symbol PSYR.

The crudest index of PSYR is the mental hospital population, which may be denoted MHP. This consisted of 43 Fijians and 125 Indians during 1954(11), yielding rates (MHPR) of 0.30 and 0.78 per 1,000, respectively; a ratio of 1:2.6. It is well-known, however, that Fijians are reluctant to seek hospital care(12). This can be illustrated quantitatively as follows. In 1954, the crude death rate for Fijians was 11.00 and for Indians 8.60(11). During the same year about 3,900 Fijians and 6,300 Indians were admitted to general hospitals, giving general hospital admission rates (GHAR) of 27.2/1,000 and 39.2/1,000 respectively. Taking the crude death rate as an index of actual need for hospitalization (NHI), then the Indian NHI was only 0.78 of the Fijian NHI (8.6/11). But the Indian GHAR was 1.44 times the Fijian GHAR (39.2/27.2). This indicates that Indians are more apt than Fijians to seek hospitalization when needed. The index of this tendency to seek hospitalization when needed (TSHI) is given by GHAR/NHI, in this case 1.44/0.78; meaning that the Indian TSHI is 1.85 times that of the Fijian TSHI (39.2/8.6: 27.2/11.0).

Applying this TSHI ratio to the mental hospital population, the corrected MHPR

for Fijians is 0.56/1,000 (0.30×1.85), equivalent to adding 37 more Fijian patients; and the PSYR Fijians : Indians is only 1.39 ($0.78/0.56$) instead of 2.6.

If it is permissible to consider gross sociopathy in computing a more accurate PSYR, then certain criminal offences should be taken into account. In 1954 there were sentenced to imprisonment or whipping, 48 Fijians and 13 Indians for sex crimes, and 47 Fijians and 35 Indians for crimes against persons, ranging from manslaughter to simple assault (13). If these figures are added to the corrected figures for hospitalizable mental illnesses, totals are 175 for Fijians ($(43+37) + 48+47$) and 173 for Indians ($125+13+35$), yielding practically equal PSYR of 1.2 and 1.1 per 1,000, respectively.

There is one more set of figures available. Admissions for psychiatric conditions (Internat. List of Causes of Death, 1929, A67 & A68) to general hospitals throughout the Islands (11) comprised 20 Fijians and 49 Indians. Adding these to the previous grand totals yields PSYR of 1.4 in each case. Correcting the last two figures for various possible discrepancies does not alter the situation. Therefore the best available estimate for the PSYR indicates equality in the exhibition of gross psychopathology by the two races during 1954.

This *tour de force* is intended to demonstrate that as more and more figures of likely significance are considered, and indicated corrections are made, the less probable it appears that there are racial differences in the frequency of occurrence of major psychopathology in this large population. This indicates that whatever their differences in cultural and social dynamics, and in their exposure to the "stresses of modern life," the two races are equally subject to such disturbances. In my opinion, based on the experiences of other colonial populations, if increased and improved treatment facilities were provided for the Fiji Islands, and time allowed for the education of the public, the mental hospital population would approach the maximum ratio represented by the United States. This development has already been approximated in the much more primitive district of French Guiana, is under way in

Trinidad (2), and is anticipated in planning for the Philippines (14).

DISCUSSION

The assumption that there were indigenous populations who existed somewhere in recent times, free of "modern stress" and "social disorganization," and consequently with little or no mental illness, requires more careful study. The history of most islands or enclaves which supposedly once met these criteria is really one of repeated waves of invasion and warfare, with recurring impositions of new stresses, important cultural changes, and new social organizations. If comparative psychiatry is to be a scientific discipline, then certain criteria will have to be approximated, certain difficulties faced, and more rigorous criticism of data and their interpretation exercised. If reasonably reliable figures concerning the grossest kind of psychopathology are subject to the kind of review which has just been demonstrated, this must apply *a fortiori* to studies of more subtle variables.

1. Prevalence and incidence should be more clearly distinguished (3), and both should be distinguished from MHPR (15). By analogy, the number of conceptions in a population cannot be determined by using an uncorrected birth-rate: and the number of babies born in hospitals at various epochs does not indicate either the prevalence of pregnancy or the incidence of conception.

2. Epidemiological data in psychiatry should be gathered, sorted, and interpreted by clinical specialists rather than by workers from other fields of medicine or the social sciences. The actual processing of data, however, is usually more effectively carried out by social scientists than by clinicians.

3. Generalizations should be based on adequate data. The fact, for example, that there is a heavy incidence of toxic psychoses in French West Africa, Southeast Asia, the Caribbean, and French Guiana (2) is a temptation to generalize this observation to include all tropical areas. But in the Fiji Islands, toxic psychoses are less prominent. Thus if a phenomenon is claimed to be general, it must be based on

observations which are literally world-wide.

4. The present crisis is a bias toward the "cultural" viewpoint at the expense of genetic and other aspects. This has some of the aspects of a romantic movement rather than of an adequately documented theoretical shift. The "cultural" literature often contains methodological flaws, leading to the dissemination of inadequately supported or unwarranted conclusions, with little or no mention of dissident opinions. Many of the phenomena nowadays popularly attributed to cultural influences might equally well be attributed to genetic, constitutional, somatotypic, traumatic, or other factors, and these possibilities must be more rigorously excluded if the cultural school is to be taken seriously.

5. In any case, the cultural approach should be re-examined because personal contact with people in different parts of the world hardly supports it. The differences between individuals in any culture seem to be greater than the differences between "cultures." Clinically, cultural differences can be effectively treated as mere dialects or accents of a common language: the Italian schizophrenic speaks schizophrenic with an Italian accent, and the Siamese manic speaks manic with a Siamese accent. The chronic female closed ward can be located from earshot on any continent. The interchangeability of clinicians is the most compelling single fact in comparative psychiatry: the migratory psychoanalyst, the transferred French colonial Medical Officer, the psychotherapeutic approach which is as effective in the Fiji Islands as it is in Trinidad.

SUMMARY

1. The complete psychiatric census of the Fiji Islands which has been taken periodically since 1911 meets some of the requirements for determination of the "true prevalence" of psychiatric disorders. It appears that such disorders were more frequent in the pre-industrial, pre-war era than in the later era of so-called "modern stress." The Fijian segment of the population experienced more change of social structure than the Indian segment, while the prevalence of psychiatric disorders ap-

parently decreased among the former. Both these tendencies run counter to current popular beliefs.

2. Hospital admission rates are of little value in determining the incidence of psychiatric disorders, since they represent the tendency to seek hospitalization, rather than the need for hospitalization. This difficulty can be approached by the use of other appropriate information to devise a correction factor.

3. An apparent cultural or racial difference in the quantitative exhibition of psychopathology, by Fijians and Indians respectively, becomes less and less as more information is considered, until it can be shown with some likelihood that the actual rates are equal. It is not improbable that the actual rates are approximately equal all over the world.

4. Certain requirements for a scientific approach to comparative psychiatry are outlined, principally the use of more rigorous epidemiological methods, and the attenuation of the current bias toward "cultural" etiology with its obfuscation of other important possibilities.

ADDENDUM

Since this was written, the writer has made another visit to the Fiji Islands to check his findings. The two most experienced authorities in the matter, Dr. Lindsay Verrier, Demographer of the Medical Department at Suva, who has a genealogical and medical file on every Fijian in the Islands, and Mr. C. C. Sachs, Chief Attendant at the Government Mental Hospital in Suva, who was born in Fiji and knows the Islands intimately, both agree that the implications of the figures given here are correct; in particular, that mentally disturbed Fijians are less likely to be hospitalized than mentally disturbed Indians, and that the present statistical findings need not be regarded as a *tour de force*, but probably fairly represent the actual situation.

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SEVEN YEARS OF AWAKENING¹ 1906-13

EARL D. BOND, M.D.²

Two reasons impel me to write about the years 1906 to 1913 in American psychiatry.

The first is that the great beginnings which came in these years, while mentioned separately in every historical account, have not been brought together. Anyone at all interested in psychiatric history knows about the decade of the eighteen-forties and its advances in hospital building, treatment and spirit; the founding of the American Psychiatric Association and its Journal, the amazing achievements of Dorothea Dix. Then the headway made in this fabulous decade, marred by a natural impulse to claim too much (an impulse which still raises its well-meaning and over-optimistic head) was followed by over 50 years of doldrums: a time when inventive medical minds turned toward the wonderful histological and pathological advances in medicine and surgery. What is not emphasized is that this static half-century was ended, and another advancing half-century begun, by several new events and many adventurous men crowded into 7 remarkable years.

The second reason is that I bridge the gap from 1908 to 1958 and I saw the changes at first hand as an innocent bystander. In 1908 I was in charge of a men's psychiatric service and a men's training school of nurses at McLean Hospital near Boston, part of the Massachusetts General Hospital. My qualifications—as judged by 1958 standards—none. I knew personally, or came to know, most of the men who began one new thing after another and I was affected by all of the events as I saw conditions before and after. I hope that my recollections of the persons involved may make them seem less remote.

The long standing doldrums, then, were broken through by winds from nine directions. There was, of course, some over-

lapping of forces. There was also an historical preparation in scholarly articles by Clarence B. Farrar beginning in January, 1908 in the *American Journal of Insanity*.³ Dr. Farrar's title was "Some Origins in Psychiatry"—his nomenclature already in advance in that of the Journal of which he was to be Editor-in-Chief.

1. In 1906 a first psychiatric hospital for teaching and research purposes was opened at the University of Michigan, with Dr. Albert Barrett as Director and teacher of psychiatry to the Medical School. Well educated in neuropathology at the Universities of Harvard and Heidelberg, Barrett had been pathologist to the Danvers (Mass.) State Hospital. When he left, first Ernest Southard, then Herman Adler took his place at Danvers.

When the second teaching hospital, The Boston Psychopathic, was ready in 1912 both Southard and Adler were assigned to run it. Southard saw to it that the job as Pathologist at Danvers came to me and this position tied Barrett, Southard, Adler and myself in close friendship and professional interests.

A curious incident cemented the tie between Southard and myself at the dedication of the third teaching hospital, The Phipps Institute at Johns Hopkins, under Adolph Meyer. Southard was in the audience on that occasion in 1913, feeling very much hurt because Dr. Meyer had not seen fit to include Massachusetts psychiatry in his program. However, when Dr. Harvey Cushing, the principal speaker, announced unexpectedly that he had not known what to talk about until Dr. Bond from the Danvers State Hospital, had shown him interesting cases of pituitary disorders, Southard sat in chuckling, boyish glee. And so the Danvers State Hospital in important and unimportant ways entered into the beginnings of all 3 pace-setting hospitals.

2. It is appropriate here to mention the lectures and the articles in which Adolf

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

² The Inst. of the Pennsylvania Hosp., 111 North Forty-ninth St., Philadelphia 39, Pa.

³ Vol. 64: p. 523.

Meyer set forth in 1906 through 1910 his great new "Conceptions of Dementia Praecox" which broke down static ideas and considered psychosis as reaction⁴ to all that had happened in a patient's earlier life. He and his formulations (Psychobiology) are a part of American psychiatry.

When Meyer was President and I was Secretary of this Association we shared a suite of rooms and the chambermaid said that we were the cleanest men she had ever known. We neither smoked or chewed tobacco and we did not drink. I basked in the reputation until at a later annual meeting younger and rowdier friends of mine left my room in a mess and I departed with no compliments from anyone.

Working in these years in close touch with Meyer until his untimely death was August Hoch, whom I followed at McLean Hospital and who inspired my first 4 years of psychiatry. It was Hoch who focussed interest on *Personality and Psychosis* and brought into use the term Shut-In Personality.

3. In 1908 the classifications of Kraepelin were making themselves felt through condensations of his books in the United States and England. Here was order, scientific thinking, facts that could be demonstrated: here were pictures of the psychoses from the outside. Kraepelin's classification had been used in the Worcester State Hospital as early as 1896 but it took many years to infiltrate the minds of most psychiatrists. In 1907 and 1908 articles in the *Journal* still spoke of the *new* ideas and the *new* classification of Kraepelin. As late as 1916 Dr. Strecker, Dr. Orton and I received a letter from Kraepelin authorizing us to make a translation of his 3-volume psychiatry: we had finished the first volume when war stopped us.

4. In 1909 came the first real impact of Freud on the United States, his only visit to America. I was in Boston, in charge of a psychiatric service near Worcester and I could have seen and heard Freud if I had wanted to but I never made an effort. Here was a man from Vienna with strange

ideas—"a Prof Freund," the newspaper said. Then his ideas were about neuroses, which were rare conditions found in the offices and outpatient clinics of the neurologists and especially in Vienna and Paris. Neuroses were Un-American. But I was lucky in the aftermath of this visit to know Dr. James J. Putnam as teacher, therapist and quietly great human being. That Dr. Putnam, deeply religious, secure in academic and social position, professor of neurology at Harvard, 63 years of age, simply accepted many novel ideas of an insecure Mid-European, who behaved very neurotically, just because they were to him essentially true, is a landmark in psychiatry. The secure, undisturbed friendship between the two contrasting men was to Freud a life long joy. But it was years before analytic interest reached the psychoses and in the interval there were interminable debates in the Boston Society for Neurology and Psychiatry—as I look back on them they seem to have focussed on some person's totally erroneous notion of what psychoanalysis was: they never touched the real issues.

Later the fact that Dr. A. A. Brill, the translator, and Drs. White and Jelliffe, the explainers of Freud's position, were all well acquainted with the psychoses and personally known to me made it easier to read their books and gain an inkling of what Freud was really talking about. White's *Outlines of Psychiatry* and White and Jelliffe's remarkable *Nervous and Mental Disease Monographs* both came out in 1907 and gradually brought analytic terms into general use. And in 1913 Jelliffe brought out the first periodical in English devoted to the new ideas, *The Psycho-Analytic Review*.

5. In 1909 also came the first Child Guidance Clinic, established by William Healy in Chicago under the awkward name of Juvenile Psychopathic Institute: and Healy's classic *The Individual Delinquent* (1914). My personal ties with Healy were fixed by a week's walk with him and Walter Cannon before any of us had an M.D. We were accompanied by the essayist Samuel McCord Crothers and I like to think that all four of us developed an interest in the affairs of the mind. Mr. Crothers put psy-

⁴ Fundament Conception of D. P., *British M. J.*, 2: 1906; Nature and Conception of D. P., *J. Abn. Psychol.*, 5: 1909-1910.

chiatric thinking into delightful words in his essays—particularly his *Pardoner's Wallet*. Here is a sample. In the minds of all of us there is a "Forbidden City inhabited by a lawless crowd known as the Prejudices. Some are—dangerous fellows to meet in the dark." Others are "harmless folk, against whom the worst to be said is they have a knack of living without any visible means of support." William Healy, now 90, sent me a letter from Florida under date of March 11, 1958 in which he remembers—as too many others forget—the influence of the "ladies of Hull House" and the gifts of Mrs. W. F. Dummer that originated and put into action the "idea of studying the problems of children before doing anything about them." At present Healy himself is studying nuclear physics and keeping up with general world affairs.

6. In 1908 Clifford Beers and in 1912 Dr. Thomas Salmon began to focus the interest of public spirited citizens first on psychiatric hospitals and then on psychiatry in general. Beers wrote the classic, "*A Mind that Found Itself*," an excited but fundamentally true account of his mistreatment as a patient in private and state hospitals. Beers, aided by Dr. Adolf Meyer, encouraged by the great response to his book, went on to found Connecticut Mental Hygiene Society in 1908. In 1912 the formation of a National Committee for Mental Hygiene was made possible by Dr. Salmon's coming as Medical Director. The two men were a team: Salmon gave a sure professional leadership which balanced Beers' up-and-down enthusiasm. While I knew Beers, I was a close friend of Dr. Salmon's and helped to put the story of his life into book form. Undoubtedly for years he and Adolf Meyer were the leaders of American psychiatry—Salmon as a doer, Meyer as a thinker. And yet Salmon—and this says a lot about the disorganization of the psychiatric field in his time—had no preparation for psychiatry except his character. He had had 3 years of medical school, no college, no internship, no residency—he "just grew" after being assigned to study an epidemic in a State Mental Hospital—grew to become President of this Association and first professor of psychiatry at Columbia University.

The Mental Health Associations of 1959 are in direct line of succession to the 1908-12 events. Somewhat condescendingly someone wrote of Beers: "In elation he conceived a grandiose plan to form a world-wide movement." In other words Beers foresaw the present *World Federation for Mental Health*.

7. From 1909 to 1913 some discoveries about the bodily organs began to have effect on psychiatry. Cannon at the earlier date began to show to any doubting person the effects of emotion on the stomach, on adrenalin, on the body in general. He made it easier for the general practitioner and internist to accept some psychiatric ideas. Cannon was my closest friend as he went through Medical School and later he became co-grandfather of 4 of my grandchildren.

At the later date Moore and Noguchi discovered and confirmed the spirochete in human brains. I have had the experience of diagnosing (pretty well) and treating (pretty poorly) many paretics before this discovery. I quote from a textbook of 1907, "General paralysis is pre-eminently the disease of the brain-worker."

It seems to me that in line with these two findings have been the shock treatments and the double set of drug therapies—the penicillin-sulfa attacks on infection and the "tranquilizers." Psychiatrists and their patients have bodies.

8. I have pondered over the influence of a close friend, Ernest Southard, because of his uniqueness. When he took charge of the Boston Psychopathic Hospital in 1912 he was to my mind neither an administrator nor a psychiatrist. But he was a genius, a philosopher, a neuropathologist, a social worker ("Kingdom of Evils"), chess champion, philologist (a polymath which I had to look up in the dictionary), an intellectual playboy. Personally lovable, original, kindly, sensitive, the physicians who worked with him and under him felt a stimulation, a love and a respect which lasted all their lives. That Karl Menninger named his children's unit after Southard is typical. Southard brought other disciplines into psychiatry—he himself was always on the edges. If a member of my family had had a mental illness I should

have sent him or her to Dr. Barrett, Dr. Brill, Dr. Healy, Dr. Meyer or Dr. Salmon, I should not have chosen Ernest Southard ; the field over which his intellect and his fancies roamed was too wide.

Dr. Henry Bunker, in his chapter in *American Psychiatry, 1844-1944*, quotes Southard on the subject of Dr. Meyer. "I shall designate him as a ferment, a catalyzer. I don't know that we could abide two of him. But—we must be glad there was one of him."

In this statement about Meyer, Southard described himself exactly. Two of Southard would have been too much for anybody. His mind forever active, his head often aching ("too many thoughts crammed into one cranium"), physically he was one of the most inert men who ever lived.

Curiously, both Southard and Meyer proposed new classifications and new nomenclatures which did not displace conventional and older schemes but which aroused discussions and made people think.

And it was Southard and Meyer who in the 7 years we are describing laid the foundations for psychiatric social service.

9. And when I mention a little book by an Englishman that appeared in 1912 I recall playing tennis with him on a beautiful sunny day in his garden in Surrey. Bernard Hart showed in the title, *The Psychology of Insanity*, he was bridging a gap between old and new ideas. Hart made it easier for the psychiatrists who had always used a 19th century terminology to grasp the new ideas and words that the 20th century brought in. He tactfully introduced Freud's ideas in old words—he mixed asylum, complex, repression, lunatic ; "the de-

lusions of the lunatic resemble many of the beliefs that are held by the sane in the fact that in both cases the mental processes have a non-rational origin." A little book, but in over 20 editions a powerful one.

In summary, psychiatry from 1906 to 1913 was advanced by insiders (that is physicians who were practicing in "hospitals for the insane") and by outsiders (a bacteriologist, a physiologist, a patient who was a layman, a poorly prepared physician, a neuropathologist). This suggests that in the future psychiatrists should be ready to learn from all sorts and conditions of men.

All the important facts which I have recorded can be found in other places (*American Journal of Psychiatry*, Centennial Anniversary Issue, 1844-1944) but they are distributed in different chapters which do not call attention to their grouping—the remarkable septenate 1906-13 does not stand out. But in those 7 years teaching hospitals, orderly classification of mental illness, psychoanalysis, psychotherapy of a new sort, social service, lay mental hygiene societies and physiology and pathology began to pour their different streams into the main current of psychiatry.

A long view of American psychiatric history shows Colonial and early National sporadic hospitalization, then a long gap to the vivid decade of 1840-9, another long gap to a discovery of new sources of power in the 7 years 1906-13 and finally a half-century of the development of those sources to 1958. It is encouraging that after the grouping of new ideas early in this century there have been no doldrums but continuous and progressive motion—the impetus has not been lost.

RHYTHMS, CYCLES AND PERIODS IN HEALTH AND DISEASE¹

FRANKLIN S. DUBOIS, M.D.²

An earlier publication(1) presented a study of time from the psychological viewpoint and on the basis of the evidence offered, the suggestion was made that the sense of time plays a significant role in the motivation of human behavior. In carrying out this study it became apparent that not only the sense of time, but also a variety of recurrent phenomena related to time influence man in his adjustment. This paper is a review of current thinking in regard to certain of these rhythmic, cyclic and periodic activities and the role they play in health and disease.

The English words *rhythm*, *cycle* and *period* stem from Greek roots that mean "measured motion," "a circle" and "a going round" respectively(2). These closely related etymological origins support Webster's statements that all three are types of repeated occurrences organized in connection with time. According to Bills(3) "This organization is achieved by recurrence of one or more elements in such a way as to establish a perceptible periodicity." Such a "recurrence of one or more elements" is manifest everywhere in nature: the observed movements within the solar system, the ebb and flow of tides, the occurrence of day and night, the change of seasons, and the unseen rhythms of light, sound and electronics. Man is not excepted from such influences for there are recurrent phenomena within the human organism. Many of the physiological and psychological functions of man are modified by a "perceptible periodicity" of the biological processes.

PERIODICITY OF BIOLOGIC PROCESSES IN MAN

How biologic rhythms, cycles and periods originate and continue in man is not known but there is no doubt that they exist(4). Regular, repetitive variations of rest and activity are always present(5).

Body temperature usually reaches its highest point during the wakeful period of each 24 hours and its lowest during sleep(5). In addition, there are variations in individual diurnal temperature curves(6). Furthermore, Kleitman(5) has demonstrated that "morning types" of persons (those whose cerebration and performance are best shortly after arising in the morning) have higher body temperatures in the morning than at night while, conversely, "evening types" (those who feel and think best at the end of the wakeful period) have higher body temperatures in the evening. Similarly, there is a rhythm in the rate of the heart beat. Although this changes continually and is influenced by many factors, Kleitman and Ramsaroop(6) state that study of the heart rate during the day demonstrates a curve which is similar to that of the body temperature except for increase after eating.

Consistent diurnal changes have been shown to occur in the basal metabolic rate(7), the blood sugar level(8), the blood lactate level(9), the number of leucocytes in the blood(10), the hemoglobin, the hematocrit and plasma protein(11) and the urinary excretion of water, chloride and urea(12). There is even evidence to suggest that there is a distinct diurnal rhythm in the frequency of the onset of labor(13).

The menses of women are the best known recurrent biologic phenomenon, but it is not well known that there are rhythms related to many functions within each menstrual cycle. To mention a few: the body temperature goes down during the pre-ovulatory phase while after ovulation it goes up only to fall again just before the onset of menstruation(4). Surprisingly, the heart rate does not act completely parallel to body temperature(6), but the basal metabolic rate does, decreasing as the temperature falls and increasing as the temperature rises(14). Also, the electrical potential difference between the index fingers of the two hands changes, showing a rise in voltage in the preovulatory period that

¹ Presented at a meeting of the Vidonian Club, New York City, Jan. 26, 1958.

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reaches a maximum when ovulation occurs (15).

An interesting biologic rhythm is that of motor activity. Gesell(16) has shown that within the first two weeks after birth infants achieve a diurnal periodicity in their sleep-wakefulness pattern. As children grow, activity periods increase and rest periods decrease(17) until, as older children and adults, they effect a more or less optional pattern of activity largely governed by surrounding conditions and personality structure, but always on an individual diurnal basis.

Finally, it is noted that body growth varies with the seasons(18), the greatest increase in weight in growing boys occurring from June to December.

PERIODICITY IN HEALTH

From neonatal rhythms such as the heart beat(19) and those of eating, sleeping and waking established early in life, to the later developed rhythms that lessen fatigue and make for greater efficiency in living, man has organized his daily activities on the basis of repetitive patterns. Furthermore, his emotional life is nourished by his created rhythms of music, dancing and poetry. To these are added the periodic beauties of nature. Individually and as a member of a social group, man has made his life better and more effective by the utilization of both innate and acquired rhythms.

From earliest days men have realized that work rhythmically performed is easier, more quickly completed and more satisfying. As soon as men began to work jointly they devised rhythms that made for speed, ease of accomplishment and social enjoyment. The value of rhythmic activity in work which man found intuitively early in his existence has been confirmed by modern science. On the basis of critical tests, Griffith(20) states that the maximal speed of each individual's rhythmic pattern is his most efficient pace. Rimoldi(21) came to similar conclusions. His controlled studies demonstrate that "under the effects of rhythm the liberation of energy and regulation of work are more nearly perfect and less costly." According to him "Rhythm

reduces fatigue" . . . and "allows the mind to relax and busy itself with other things." Coleman(22) has shown that rhythm of movement is the most important factor in the development of endurance and delay of fatigue, and Walther(23) emphasizes that the application of rhythm to industry makes work less fatiguing and less monotonous. Thus men of long ago were right when they blended music, words and action in rhythmic harvesting songs for workers in the field and chanteys for sailors. Such melodies combined with work regulate the rhythmic expenditure of energy, adding not only to man's accomplishments but to his enjoyment.

The rhythm of music, poetry and the dance have contributed to man's well-being in still other ways. Hughes(24) believes that the heart beat was first transmitted into the drum beat for walking and marching and into a faster beat for singing and the measures for dancing. Terry(25) states that the internal rhythm of breathing and circulation are related to external rhythms such as the tides and the seasons and that man often expressed his conceptions of natural phenomena in spontaneous dancing. He used the dance to express emotions—fear, anger, love—and also to ward off evil spirits and to cultivate beneficent gods. There can be little doubt that the dance played an important part in maintaining emotional good health in primitive people.

As in the dance and music, poetry is based on man's inherent rhythms. Untermyer(26) says: "Poetry exists because there is in man the same sense of rhythm that dominates all life," and "the love of rhythm and a sensitiveness to the appeal of poetry is inherent in varying degrees in everyone." Long before children talk or comprehend words they respond to the rhythm of nonsense rhymes and of blank verse. It is the response to the rhythm of words that so often makes poetry a balm to the troubled spirit.

PERIODICITY IN PHYSICAL ILLNESS

Perceptible periodicity plays a part not only in health, but also in disease. From the time of Galen, physicians have been aware of the regular recurrence of certain illnesses, but it is only recently that earlier

reports and observations have been correlated and collected into a clinical entity now designated "periodic disease." Reimann(27) has assembled a group of apparently unrelated and collected into a clinical entity now current periodicity, "dependent upon or provoked by a single underlying rhythm." He points out that the disorders that make up this syndrome have in common "similar regular cycles of recurrence, combinations and substitutions of features, a genetic aspect, ineffectiveness of therapy and an unknown cause." Among such illnesses are periodic fever, periodic abdominalgia, periodic arthralgia, periodic neutropenia, periodic purpura, periodic edema and, possibly, such things as periodic paralysis, periodic vomiting and periodic ulceration of the oral and genital mucosa. It is Reimann's belief that the immediate cause of these superficially independent but genuinely related disorders is a vasomotor disturbance, the fundamental cause of the vascular change being unknown.

PERIODICITY IN PSYCHIATRIC ILLNESS

It has long been recognized that rhythmic, cyclic and periodic activities play a part in many of the phenomena seen in mental health and mental disease.

Almost 100 years ago Darwin(28) emphasized that "emotional expression belongs to rhythmical forms." Somewhat later Wundt(29) stated that rhythm has a large element of affective tone and that rhythm in emotions arises from feelings of expectation and satisfaction and that its continuance depends on repetition of tension. More recently Kubie(30) has said that this repetition of tension stems from the "recurrence of ungratified demands," that is, the recurrent delay or frustration of an instinctual urge. And Lourie(31) has demonstrated that this tension may be released in rhythmic motor patterns that seem to satisfy "an inner instinctual need" and "facilitate motor and ego growth and development in the infant." Thus it appears that rhythmic patterns are not only present in the emotional life of an individual but that they serve a useful purpose in the development and in the maintenance of good emotional health.

Coleman(22) states that all bodily rhythms have psychological significance

and that free emotional expression is rhythmic. He believes that rhythm and arrhythm induce different states of emotional feeling, thus suggesting that rhythmic processes play an active role in the psychological mechanisms of man. Hersey's(32) work on emotional cycles supports this view. He studied 25 "normal" people and demonstrated cyclical variations in their emotional tones. Each one had a highly individual cycle of regular highs and lows of mood. He noted that during the "high weeks" a person's drive toward activity was greater, that he felt well, anticipated pleasures, planned hopefully and was optimistic. Conversely, during the "low weeks" the same person found it difficult to muster physical and mental strength, had to push himself, concentrated with difficulty, preferred to sit quietly, found nothing very pleasant, was disturbed by minor crises, and was creatively unproductive. In short, life was something of a burden. This controlled study of "normal" people confirms the widely held clinical impression that *all* human beings function in terms of cycles of mood and that feeling tone varies not only from week to week and day to day but also from hour to hour. It also demonstrates that the periods and degrees of mood variation differ from person to person and must be carefully appraised and wisely considered in dealing with an individual's adaptive difficulties.

It is but a short step from such observations to a reaffirmation of Adolf Meyer's statement made in 1902(33) that "in psychiatry a certain periodicity of depression and excitement exists." The recurrence of attacks in manic-depressive psychosis are well known(34). Similarly, cycles of alternating "good" and "bad" behavior in psychotic patients have been mentioned in the literature(35) and periodic relapsing catatonia has been studied extensively(36, 37, 38, 39, 40). That such cyclic psychiatric disturbances are not rare is emphasized by Richter's report(41) that a study of the histories in the Phipps Psychiatric Clinic revealed over 250 patients with cycles in mood and behavior. From Richter's work it would seem reasonable to conclude that rhythmic activity occurs in practically all nosological psychiatric entities. Certainly

it is present in schizophrenia, manic-depressive disease and organic brain syndromes. Probably it is a component of certain behavior disorders in children (42) and possibly it contributes to the symptoms of the neuroses (30). Also, there is rhythm in the occurrence of peptic ulcer (43), of epileptic seizures (44, 45, 46, 47) and of familial periodic paralysis (48, 49). It is obvious that the phenomenon of periodicity plays an important role in man's physiologic and psychologic adjustments.

THE NATURE OF PERIODICITY

The late Alan Gregg (50) wisely said that he would welcome more rigorous studies of the mathematics of probability and would like to see physicians have a broader knowledge of rhythmic and cyclic phenomena. He pointed to the work of the Foundation for the Study of Cycles (51) and urged support of its program and of those who have like interests. Although modern research has not yet given a definite understanding of rhythms, cycles and periods, some facts have been authenticated and several interesting theories have been proposed. For example, Gjessing (36-40) has shown that recurring periods of abnormal thinking, behavior and mood occur irrespective of external events or conditions in patients suffering from periodic catatonia. He concludes from psychiatric and biochemical analyses that cycles of abnormal behavior are related to nitrogen metabolism and that the nitrogen balance shifts immediately preceding the change in psychologic state. Furthermore, he believes that at such times a toxin is produced which influences the diencephalon so that mental function is altered. The successful treatment of some of these patients with thyroid extract (52, 53, 54) which eliminates the swings in nitrogen balance, lends credence to Gjessing's careful work. However, other investigators do not consider such a metabolic disturbance of primary significance.

Richter (41) produced cycles of behavior and metabolism in rats by experimentally interfering with the functions of the thyroid and pituitary glands. He holds that the cycles brought about by interference with the thyroid depend primarily on "a

prolonged period of thyroid deficiency, which apparently produces secondary changes in the hypothalamus." Interestingly, and perhaps significantly, some of the experimentally-produced cycles were like those seen in human beings with periodic agranulocytosis, while others were similar to the disturbances of behavior and mood observed in catatonic schizophrenic patients. Like Richter, Lindsay (55) thinks that the primary factor in the production of abnormal cycles is a change in the hypothalamus, while others (54, 56, 57, 58, 59, 60, 61) believe the basic disturbance is an imbalance in the endocrine system.

Cole (62) postulates that an endogenous mechanism for inducing persistent rhythms may be the result of a particular hormone accumulating until it reaches some theoretical threshold that initiates a rhythm which simultaneously begins to exhaust the hormone. He also points out that rhythm-inducing factors may be exogenous in character; thus, periods of activity within the organism may be influenced by light, meteorological conditions, tides, phases of the moon and perhaps by cosmic radiation and the earth's magnetic field.

Peterson (63) also stresses the importance of such exogenous factors, especially meteorological conditions, in the production of biological fluctuations. He links sun spot activity and its effect on temperature and weather, which in turn influence body chemistry, with many periodic changes in the functioning and activity of human beings. He even relates solar activity to important historical events.

Finally, Reimann (64) emphasizes that certain authorities (22, 65, 66) regard rhythm as a fundamental law of nature and that this wax and wane of biologic processes may bring about the recurrent episodes of illness seen in "periodic disease." He points out that the most striking feature of the periodicity in these recurrent episodes of illness is the regularity with which they recur at intervals of 7 days or multiples thereof. For emphasis, he stresses that fever recurs at intervals or multiples of 7 days in certain patients with osseous tumors, leukemia and anemia (67); that arthralgia occurs at intervals of 7 days in bucellosis (68, 69); that Galen connected

the quarterly phases of the moon with the 7-day return of periods of fever; and that the menstrual cycle occurs at an interval of 4 times 7 each month. To explain this phenomenon of 7-day periodicity Reimann offers the fascinating conjecture that the rhythms of human life may be controlled by the solar cycle of 6.6 days, a thought that gains some status from the long-time historical and religious significance of the number 7.

SUMMARY AND CONCLUSIONS

In this review of rhythms, cycles and periods, reports are cited to support the view that both the physiological and psychological processes of man are influenced by recurrent biologic phenomena. Such periodic activities are basic ingredients in the behavior of human beings and actively influence man both in health and disease. Several theories as to the origin and perpetuation of these recurrent changes have been suggested but none has been completely validated. The true nature of rhythms, cycles and periods is a mystery and remains a challenge to future scientific investigations.

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THE CHALLENGE OF RESULTS IN PSYCHOTHERAPY

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The tranquilizers have given psychiatry an unexpected by-product by forcing us to improve our evaluation of methods of treatment. These drugs exposed on a large scale the important influence through suggestion of new medicines which may also have powerful pharmacological properties. The firm establishment of the pharmacological efficacy of these drugs has required carefully controlled studies. In the literature of pharmacotherapy, accounts of soundly planned and executed research have almost entirely displaced the impressionistic reports based on "experience" which used formerly to fill the pages of psychiatric journals. We may expect that these standards will soon extend to the study of psychotherapy. As they have not yet done so, a brief review of the problem of results of psychotherapy may illustrate present shortcomings and point towards the needed reformation.

Although each year a spate of articles on psychotherapy pours from the press, an extensive search of the English literature on the subject showed that less than 75 articles on results of psychotherapy have been published in the psychiatric journals and about the same number in journals of psychology. Moreover, of these articles many merely deplored the paucity of results and did nothing to remedy it. Relatively few of the articles presented actual results of series of patients treated and of these even fewer met the minimal standards of excellence in research that we have grown accustomed to in, say, biochemistry or physiology or, among ourselves in pharmacotherapy. Few articles described carefully the patients treated or the method used; few included attempts at objective measurements of changes in patients and almost none included followup studies.

From the unsatisfactory, but available data we can reach several tentative conclusions, each of which will possibly require revision as we gather more valid data. First, large numbers of mental pa-

tients recover with little or no treatment in from 1 to 3 years. For psychoneurotic patients, for example, various studies show the percentage of such "spontaneous" recoveries to vary between 40 and 70% of the patients in the series (1, 2, 3, 4).

Secondly, comparisons of groups of treated and untreated patients have so far failed to demonstrate the efficacy of psychotherapy. The percentage of recoveries does not usually run higher in groups of treated patients than in those untreated. Eysenck has concluded on the basis of these comparisons, that a psychoneurotic patient has a slightly greater chance of recovering if he stays away from a psychotherapist than if he goes to one (5). However, he cannot prove this because the groups compared have perhaps not matched satisfactorily (6). Patients who seek psychotherapy from psychiatrists may have more severe illnesses than those who do not, many of whom recover spontaneously. On the other hand, social and economic factors seem to influence access to a psychotherapist more than the nature or severity of an illness (7), so possibly the compared groups do match. We cannot know without further study.

Thirdly, among rival kinds of psychotherapy comparisons again fail to show a superiority of one over another (5, 8, 9). Wolpe (10, 11) has published an exception to this pattern in his results with a large series of patients treated according to principles of learning theory and conditioning. He reports that between 85 and 90% of his patients became "cured" or "much improved" and contrasts this figure with the much lower recovery rates in patients receiving eclectic psychotherapy (9) and psychoanalysis (8), respectively 53% and 62% in the 2 series used for comparison.

That psychotherapy of various kinds or of our favorite kind, helps mental patients remains an important conviction of most of us. But with our present data such a conviction can hardly amount to more than an opinion among any who adhere to the principles of science. Many physicians of

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the 17th to 19th centuries had convictions about the efficacy of phlebotomy, but who bleeds patients today? The history of medicine, and of our own specialty particularly, shows that personal conviction provides an insufficient basis for therapeutic action, especially when danger or expense occur with the therapy. Harm rarely comes from psychotherapy, but expense nearly always. Considering the millions of dollars annually invested in it by patients and psychiatrists, by teachers and trainees, that we have almost no satisfactory studies of its results is a major scandal of our profession.

We can explain our failure to study results and should perhaps try to do so, provided we do not use our explanations as excuses. In the first place, our profound ignorance of human behavior probably prevents us from distinguishing the more from the less fundamental changes in our patients. We often rely on observations of changes in symptoms while comparing these to the visible part of an iceberg; for the most part, we have not settled among ourselves the nature of what lies below the surface in psychopathology. Secondly, important behavioral changes occur slowly, certainly much more slowly than most of the changes an internist can observe after his therapies. Consequently, many patients we would like to study over a necessary period of observation disappear (often by moving to other communities) before proper followup studies have taken place. Thirdly, our emotional involvement with our patients often obstructs our evaluation of them. Most of us believe we could not treat them if we did not become involved emotionally with them, but we ought to recognize that this involvement often disqualifies us from evaluating the improvements of patients. Few parents think their children dull and few psychotherapists think their patients unimproved. Furthermore, our earnest desire to relieve human suffering makes difficult our asking a patient to wait for therapy while we appoint him a control subject. And if we do, he will probably seek help elsewhere. Finally, we must consider the least praiseworthy of our shortcomings in this matter, personal attachment to a particular theory and prac-

tice. As one improved tranquilizer succeeds another we can change pills without much change in ourselves. But to change psychotherapies requires changing our own habitual behavior. Perhaps it also means loosening affiliations with an adherent group of colleagues and even a decline in income from leaving a fashionable therapy for a successor not yet so popular.

Despite these obstacles without and failings within, we could study results of psychotherapy much more than we do and with less additional work than many may imagine when they postpone looking at their own results. Useful studies contributing some information, far better than the negligible data we now have, would not necessarily demand elaborate design. This brings me to attempt an outline of some requirements for a satisfactory study of results of psychotherapy.

The selection of patients for such a study first deserves attention. Ideally all applicants should receive psychotherapy, one portion receiving treatment by one method and another by another method, or perhaps less treatment. But we can rarely arrange matters so neatly. Then we must become aware of the reasons for selection. If we select patients who can afford treatment and turn away those who cannot, we will study a special economic group but at least we will know the basis of our selection. More harmful for research purposes are selections governed by other pressures, e.g., the apparent severity of the symptoms, or an "impression" on the part of the therapist that the patient will respond favorably. Such selections may make difficult or impossible the comparison of the group with other groups.

Next, we should record the kind and severity of each patient's symptoms, those of which he complains and those observed only by others. A therapist should say at the outset what he proposes to remove or improve. If the patient comes with the principal complaint of headaches, we should not consider him "much improved" if his headaches persist when the treatment ends. This simple precaution would put a stop to claims frequently heard to the effect that although a patient preserved his symptoms he had nevertheless "matured" or

"received considerable benefit" from his treatment. Such statements may contain truth, but this we can only know if their author describes his criteria for making them. The description of symptoms should include several topics of observation, *e.g.*, physical symptoms, subjective disorders of thought and feeling, and disturbances in personal relationships. Improvements in one of these parameters may accompany or even cause worsening in another (12).

The duration of symptoms deserves attention since this sometimes enables a patient to serve as his own control and sometimes shows the need for other control subjects with which to compare his treatment. For example, if a patient has unmistakably severe symptoms for 5 or 10 years, receives treatment for a year and subsequently remains well for a further 5 years, we have some evidence of benefit from the treatment, and this evidence multiplies when found in a series of 20 or 30 patients treated by the same method. On the other hand, when patients receive psychotherapy for 4 or 5 years for illnesses whose duration before treatment extended back only 1 or 2 years, we can say little about the efficacy of the treatment even when large numbers of patients recover under these circumstances. Such cases require for their evaluation a matched group of untreated patients as controls for spontaneous recovery.

A sound study of results should include also a description of the technique of psychotherapy used. Words like "psychoanalysis" and "psychotherapy" will not suffice because different authors have already applied them to widely varying techniques. We should learn the therapist's theoretical emphasis or emphases, *e.g.*, recovery of repressed memories, interpretation of the doctor-patient relationship, principles of conditioning, and how he acts with his patients to implement his intermediate goals. He should record also how often he and his patients meet and over what period of time.

We will probably progress more rapidly if we limit our categories of change in treated patients to two; namely, "cured or much improved" and "little or no improvement." To enter the first category a patient must at least have lost all or almost all the

symptoms which first brought him to therapy. He may have made other gains also, but must have made these. Since almost any patient gains something from contact with a friendly therapist, the categories of "slight improvement" or "moderate improvement" lend themselves too easily to the wishes of both patient and those treating and observing him. We may legitimately exclude patients who drop out early from a study although we should try to learn what happens to them afterwards.

Several persons should independently evaluate the changes in the patients. The therapist and the patient should certainly give their opinions, but we cannot always expect them to achieve the necessary objectivity for the task. The therapist's wish to succeed and the patient's wish to please may make them unwitting partners in a conspiracy to perceive more improvement than others can discern. The independent observations of members of the patient's family and of another professional person can greatly improve the evaluation of the patient's changes. Psychological tests have so far contributed little to measuring such changes (13), but continued study of their weaknesses may bring useful improvements.

Finally, apparent improvements brought about through fortuitous relief of life stresses or the transient but powerful effects of suggestion make followup studies essential to the evaluation of a technique of psychotherapy. Some followup studies of patients after relatively brief therapies, have shown further improvements in the conditions of patients compared to their conditions at the time treatment stopped (11, 14, 15). Such observations suggest the processes of spontaneous recovery already mentioned or the practicing and self-reinforcement with further benefits of new behavioral responses initially learned or stimulated in psychotherapy. But whether followup studies show relapses, maintenance of gains, or further advances in the patients, we cannot neglect them without hazard to the value of the entire study of results.

SUMMARY

I believe these simple rules within our means if within our desires. We should

hardly ask less of ourselves if we ask others to consider us scientists when we teach and practice psychotherapy. We can and should learn much about psychotherapy through other studies besides those of results. Yet we can only judge a therapy as therapy by its results and not by its attendant retinue of theories, however elegant and harmonious these may seem to be. Some years ago, Glover sounded a solemn warning on this matter with regard to psychoanalysis when he stated,

In my opinion, the main obstacle to the progress of psychoanalysis is the absence, first of reliable statistics of results, and, second, of any followup investigations. . . . Unless we know with some precision the exact limitations of psychoanalysis in different groups of mental disorder, we run the risk of providing new theories to explain away failures(16).

These reproaches apply equally to all kinds of psychotherapy. Their truth and the urgency which underlies them should stimulate us to remove the justification for them which derives from our continued neglect of the results of psychotherapy.

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RELATIONSHIPS AMONG SEIZURES, PSYCHOSIS AND PERSONALITY FACTORS¹

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The purpose of this paper is to call attention to some of the relationships among seizure content, inter-seizure behavior and personality background that exist in convulsive states. The neurophysiological observations of recent years have shown that epilepsy is associated with brain damage or at least altered brain function. While we cannot talk of a psychological cause of epilepsy, a psychiatric approach may still be fruitful. The seizure, the psychoses and other personality changes are indeed manifestations of brain injury much as are the changes in behavior associated with tumors, surgically induced brain lesions and the effects of ECT. In each of these, the alterations of behavior depend not only on the location, extent and rapidity of onset of the lesion, but on the social background of the individual and the situation in which the behavior is being observed.

The material was gathered from 50 patients hospitalized at the National Institute of Health for possible surgical treatment of seizures. They were admitted because their seizures had been resistant to medical and/or previous surgical treatment and because the clinical picture or EEG record had shown evidence of temporal lobe pathology. All subjects had EEG abnormalities reported as diffuse or localized to one or both temporal lobes. In some cases the seizures themselves were not severe or frequent but they had interfered with the patient working and otherwise existing in the community. Patients were hospitalized on a special ward housing mainly seizure cases. In most cases coming to the National Institute of Health was a kind of last chance and supreme effort eagerly anticipated by the patient and his family. In these respects we were dealing with a special situation.

The first observations concern the *aura*. This is, of course, a misnomer as the aura is not a breeze or warning but an integral part of the seizure. While the experience reported by the patient showed significant correlations with electrographic records it could not be understood simply as the physiological response to a specific cortical or sub-cortical area. Rather the experience is organized on a symbolic level where visual, auditory and other perceptual and amnesic elements take form in the context of a particular pattern of social relatedness. Whether a sensory aura is felt as painful, dead, numb or tingling depends not only on which nerve cells are activated but on the patient's habitual type of relating in the socially organized environment. One man had seizures in which he described painful sensations in his left limbs, as if they were being cut or twisted off, along with a feeling of deadness in them. For years he had worried about a chronically ill wife. He was fearful not only that she would die from her illness but that she would get run over or meet with a similar mishap whenever she left him. In interviews when asked about himself, he invariably got off on the subject of his wife's ailments and how often she had been close to death. In this case, the aura indicated not only a lesion in one of the cortical sensory areas but that the patient conceptualized a relationship in terms of violence and death. Patients who reported bad smells and tastes similarly described past experiences in traumatic terms and not only were the smells and taste disagreeable but they might hear and see threatening things. One woman had as her aura, a bad taste, a terrible odor and a feeling that someone behind her was going to grab her. This persisted despite two temporal lobe ablations. In telling the story of her life she described beatings by her father, the tragic death of her mother and an unhappy marriage to a brutal alcoholic. Not only was the past pictured in these terms but she also talked of her hospital experiences

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in this way. When asked about her operation, she answered with an account of the drilling, cutting *etc.* Patients usually responded to this question with expression of appreciation for the surgeons and hopes for a cure.

Similarly when a scene from the past was visualized it was not simply a matter of the excitation of a particular group of cells in which the memory had been stored. The experience was a highly selective and condensed symbolic representation of current problems and relationships. For example, one patient repeatedly had a panoramic memory of a scene in his home town pictured in vivid detail. He was a person with a great attachment to home and family who derived his most significant feelings of identity in these symbols. In the course of 3 hospitalizations in each of which he had a craniotomy, the scenes differed in certain details which could be correlated with contemporary stressful events. Shortly before his second operation he saw the scene about his house as it was in actuality except that the path to his door was a purplish-red color. While awaiting his third operation he visualized the garage, a two story structure, with an additional third story.

Several patients had seizures concerning children. One girl could see a picture of her sister holding a baby. Another woman, as her spell began, would rush to hold her baby. These were persons who had derived their main sense of identity through the parent-child relationship, placing themselves or others in the role of a child, and expressing their own needs through their children. The patient who saw her sister holding a baby was a 15 year old girl very dependent on her elder sister. In these seizures the symbol "child" represents the patient's feelings about herself. In the course of recovery from an operation when one of these patients was reluctant and uncertain about leaving the hospital this attitude was seemingly expressed in the obsessive worry that something was going to happen to her child.

As the main component of their spells two women had urinary incontinence (on the whole this was uncommon even in a grand mal seizure). They showed so many

similarities in personality structure that a brief account of their behavior may be given. One was a 21 year old girl described as having been very prudish and resentful of men. Her seizures were completely controlled with medication but she developed sexually aggressive behavior, making advances to male patients. She became particularly involved with a boy with seizures from her home town. She also told stories of how her father beat her. The other young woman was described as highly critical of men and very self-conscious with them. She claimed that no man would marry her because of her seizures and insisted that even if she did get married she would not have children because epilepsy was hereditary. She did not develop a psychosis but the night after surgery had a dream in which a man that she knew had an operation identical to her own.

In each of these cases the occurrence of urination in the seizure seemed related to a stereotyped, sexually aggressive "masculine" orientation. What was striking in these two patients and others was the highly stereotyped and clichéd language that was used to relate experiences and characterize people. Parents were described as wonderful, kind and loving or terrible and cruel. One of the girls maintained "men are only out for one thing" and used this as a central focus in describing her relationships. There was a great deal of black and white, sin and virtue, God and Devil structuring of the environment.

Psychoses as defined in the conventional sense occurred in 12 patients during their hospitalization but remarkable or abnormal aspects of behavior occurred in almost all patients. This may be compared with Ervin, Epstein and King's observation that out of 28 patients with psychomotor seizures, 24 were diagnosed as schizophrenic and others as neurotic or having severe personality disturbances(1). In our group the psychotic reactions were of short duration and generally came on shortly after admission, following the withdrawal of drugs. As Gibbs, Epstein and his associates have pointed out, there tends to be a reciprocal relationship between seizures and psychosis. When the patient is psychotic he is

apt to be free of spells. In our patients too, most of the psychoses developed in patients without colorful subjective phenomena while those with complex visual and auditory experiences had a considerably lesser incidence.

Clinically the psychoses did not differ from schizophrenic and manic reactions, with catatonic and paranoid delusional types. A number of these passed through several stages. First the patient in his actions and words seemed to identify with big cultural stereotypes such as death, God and Jesus, the Devil, cure of cancer or epilepsy *etc.* Next there was a series of reduplicative delusions and misidentifications. Another patient might be called a cousin who had a cancer, or a nurse might be identified as someone who had died, or a doctor misrecognized as someone from home. In the third stage there frequently developed paranoid or euphoric attitudes toward the nurses and other patients. Thus, the nurse might be accused of treating them badly, or giving the wrong medication. Such a charge might be followed an hour later with loving praise of how wonderful she was. One man in his most confused state talked vaguely about racial miscegenation. He developed the idea that a negro and white staff member were married. Finally he expressed great appreciation and fondness for the care given him by a negro aide. A frequent maneuver was for the patient to make an angry charge against a nurse and then go back

and apologize at great length with many expressions of love and affection. Many patients who did not develop psychoses as such showed this kind of behavior repeatedly. Some were very withdrawn, remaining in their rooms in preoccupied fashion. It was of interest that following surgery these patients showed marked amnesic manifestations indicating a loss of relatedness in the environment expressed at a different level.

SUMMARY

In the seizure itself, in the psychosis which may develop, and in other verbal and non-verbal aspects of behavior the patient conceptualizes himself and his problems at different levels of interaction in the environment. The level of interaction is determined by the degree of stresses and/or the particular milieu of brain function. The content of the symbols or language that he uses is that which gives his experience the greatest and most vivid feelings of reality. All symbols take on form and meaning by reason of their place in a pattern of social relatedness and in the disturbance of consciousness associated with the seizure we become unaware of the patterning processes of language, how in language we selectively classify the environment and identify ourselves with cultural values.

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PSYCHIATRIC ORIENTATION AND ITS RELATION TO DIAGNOSIS AND TREATMENT IN A MENTAL HOSPITAL¹

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It has long been apparent that the growth of a science of psychiatry awaits the development and acceptance of standard nomenclature and adequate criteria for determining the nature and types of psychiatric impairment. In view of the recent advances in other branches of medicine and in the physical and social sciences as well, it is almost inconceivable that psychiatrists are as yet unable, except in instances of relatively gross behavioral deviations, to distinguish between and define mental health and illness(1). The commonly promulgated definitions of mental health and illness are still so vague that they are frequently meaningless in practice.

It is equally unfortunate, and from the standpoint of actual practice, an even stronger indictment of the present state of psychiatry, that equally competent clinicians as often as not are unable to agree on the specific diagnosis of psychiatric impairment. Inter-clinician reliability on diagnosis has consistently been found to be low(2). Since hospitalization, course of treatment, case outcome, and research are all in large measure dependent on and related to specificity of diagnosis, the failure to expend more effort in developing adequate, specific and reliable diagnostic categories is a very serious matter. The lack of adequate diagnostic criteria not only impedes clinical practice, but frustrates epidemiologic attempts to arrive at the etiology of the various types of psychiatric impairment and at their incidence and prevalence. Any number of studies have indicated that psychiatric diagnosis is at present so unreliable as to merit very serious question when classifying, treating and studying patient behavior and outcome. The results of one such

study indicated that two-fifths of the diagnoses made in a clinic had to be revised one year after the discharge of the patients on whom they were made(3). In another study, it was found that different psychiatrists used different criteria as means of distinguishing between organic and psychogenic disturbances and between schizophrenia and the affective psychoses(4). Even in the only study in which it was suggested that satisfactory inter-rater reliability was demonstrated for some of the diagnoses, it was found that only 80% of the very gross classifications of a patient as organic, psychotic or characterological by one psychiatrist were independently confirmed by another. It was also found in this same investigation that when the specific subtypes of these disorders were considered, agreement between two independent raters occurred in only about half of the 426 cases studied(5).

This paper presents a wholly different approach to the problem of the reliability, and hence the validity of psychiatric diagnosis. It will be shown that the diagnosis of first admission cases in a psychiatric institute type of mental hospital over a 2-year period shows extreme variation by ward and equally great variations on the same ward, with changes in ward administration. These inter and intra-ward variations in diagnosis will be shown to occur despite the random assignment of patients to the various wards.

PROCEDURE

The study reported here was conducted at the Columbus Psychiatric Institute and Hospital. This institution provides voluntary admission patients with short term, intensive therapy, and is also a research and training center. It is an adjunct of both the Ohio State University Department of Psychiatry and the State of Ohio Department of Mental Hygiene. The institution contains 126 beds divided into 5 wards (3 female and 2 male) which operate on a

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largely autonomous basis. Patients are assigned to each ward on the basis of available beds and any selection which may occur in patient placement would result from the differential length of hospitalization on the various wards rather than through administrative policies. Since there is usually a waiting list for the female wards, bed space is at a premium and little, if any, selection in ward placement actually occurs.

This institution is heavily staffed with professional personnel and is the antithesis in most respects of the traditional custodial type of mental hospital. Each ward is supervised by a chief ward psychiatrist. In addition, there are 3 or 4 psychiatric residents, a clinical psychologist, 3 or 4 registered nurses, a social worker and an occupational therapist who comprise the clinical team. Interns, externs and trainees in the various specialties are also assigned to the several wards.

The study involved an analysis of the final diagnosis given to each of 538 female first admissions during a 2-year period, Jan. 1956 through Dec. 1957. All later admissions were eliminated to prevent the contamination in diagnosis which might otherwise have resulted. Special attention was devoted to the female cases since a greater variety of inter- and intra-ward analyses were feasible. Of the 538 female patients, 141 had been assigned and discharged from one ward which had been in existence for only 18 months. A second ward treated 206 patients in the 2-year period and the third ward 191 patients in this same time. On this latter ward, there had been a dozen ward administrators in the past 5 years and 3 during the past 2 years. Of the 3, one was responsible for 75 patients, another for 68 and the third for 48 patients.

RESULTS

The findings indicate that the female patients assigned to each of the 3 wards, and to each of the 3 administrators on the one ward, did not significantly differ from each other socially or economically. (Table 1) This would corroborate the known and stated policy of random assignment of patients to each of the 3 female wards. Ap-

proximately, 90% of the patients on each ward had been voluntarily admitted. Some 11% were Negro. Over half were housewives, 22% had been employed full-time prior to admission and the rest were students or were non-employed. Over three-fifths were married, 17% were single and 22% were divorced, widowed or separated. Some 22% had no more than a grade school education while 17% had received some college training. Most of the female patients were urban (86%) and Protestant (87%). The 538 female patients averaged 36 years of age (age range 14-75). The important point again is that on none of these social characteristics did the patients on the 3 wards or on the same ward differ significantly over time. Despite this, the diagnoses given these patients on both the 3 wards and on the ward which had had 3 administrators did indeed differ. Table 2 indicates that there was considerable inter-ward variation in 3 diagnostic categories. The percentage of patients diagnosed as schizophrenics varied from 23 to 36%; those diagnosed as psychoneurotic varied from 30 to 45% and those diagnosed as characterological from 12 to 22%. These differences, extreme and significant as they are, actually obscure as much as they reveal. As already noted, one of the 3 wards was administered by 3 different persons and their differential diagnoses tended to give this ward a broader spectrum of diagnoses than either of the other two wards.

The intra-ward variations over the 2-year period on the ward with the 3 administrators makes the point of differential diagnosis with greater impact. Table 3 indicates that two-thirds of the cases (32 of the 48) under the administration of Psychiatrist Z were classified as schizophrenics compared with 22 and 29% respectively under Psychiatrists Y and X. Psychiatrist Y diagnosed 56% of the patients as suffering from a characterological disturbance as opposed to 47% for Psychiatrist X and only 15% for Psychiatrist Z. It should again be stressed that the 3 administrators were dealing with the same type of patient; that they were training the same type of resident; and that they had equal access to the skills and approaches of the other members of their clinical teams.

TABLE 1

SUMMARY TABLE OF SOCIAL CHARACTERISTICS OF
538 FEMALE PATIENTS, BY WARD,
IN NUMBER AND PER CENT

Type of Admission	A		Female Wards B		C	
	No.	Per Cent	No.	Per Cent	No.	Per Cent
Non-Voluntary	25	13.1	17	8.3	11	7.8
Voluntary	166	86.9	189	91.7	130	92.2
Total	191	100.0	206	100.0	141	100.0

$X^2=3.31$

P, not significant

Marital Status	A		B		C	
	No.	Per Cent	No.	Per Cent	No.	Per Cent
Single	35	18.3	38	18.5	17	12.1
Married	112	58.7	126	62.1	90	63.8
Div., Widowed, Separated	44	23.0	40	19.4	34	24.1
Total	191	100.0	206	100.0	141	100.0

$\chi^2=3.96$

P, not significant

Education	A		B		C	
	No.	Per Cent	No.	Per Cent	No.	Per Cent
Grade School	44	25.1	39	20.2	29	21.8
High School	102	58.3	120	62.2	85	63.9
College	29	16.6	34	17.6	19	14.3
Total	175	100.0	193	100.0	133	100.0

$X^2=2.11$

P, not significant

Residence	A		B		C	
	No.	Per Cent	No.	Per Cent	No.	Per Cent
Urban	163	85.8	172	83.5	126	90.6
Rural	27	14.2	34	16.5	13	9.4
Total	190	100.0	206	100.0	139	100.0

$X^2=3.73$

P, not significant

Age*	A		B		C	
	No.	Per Cent	No.	Per Cent	No.	Per Cent
Mean age at admission		35.6		36.1		36.5
Standard Deviation		13.8		13.2		14.4
Number of Patients		191		206		141

* There were no significant age differences by ward.

TABLE 2

INTER-WARD VARIATIONS IN DIAGNOSIS,
IN NUMBER AND PER CENT

Diagnosis	A		Female Wards B		C	
	No.	Per Cent	No.	Per Cent	No.	Per Cent
Organic Disorders	17	8.9	15	7.3	14	9.9
Affective Disorders	11	5.8	11	5.3	5	3.6
Schizophrenia	69	36.1	47	22.8	36	25.5
Psychoneurosis	57	29.8	92	44.7	42	29.8
Characterological	23	12.1	26	12.6	31	22.0
All Others	14	7.3	15	7.3	13	9.2
Total	191	100.0	206	100.0	141	100.0

$X^2=23.28$

$P=.01$

This analysis of differences in diagnosis would be largely an academic exercise were it not for the readily documented fact that diagnosis is importantly related to hospital treatment and that both diagnostic and treatment practices are part of the general etiological outlook of the psychiatrist. Using data collected in 2 separate sub-samples—one year apart—the following relationships between diagnosis and other hospital and treatment variables may be specified with a modest degree of accuracy. 1. The length of hospitalization is definitely related to, though not necessarily an effect of, psychiatric classification. Table 4 indicates that hospitalization is most prolonged for female patients classified as schizophrenics and least so for those diagnosed as person-

ality trait disturbance (characterological) cases. Intermediate lengths of hospitalization are characteristic of psychoneurotic, affective and organic cases. Since some wards and administrators seem to cluster their diagnoses, there is also a considerable difference in the length of hospitalization by ward.

2. The utilization of specific forms of treatment such as electroshock or drug therapies are also clearly related to diagnosis. As noted in Table 4, none of the female patients classified as either characterologically or organically disturbed received ECT whereas one-fourth (4 of 15) diagnosed as affective (involutional) cases received a total of 30 such treatments and 4 of 47 patients designated as schizophrenic

TABLE 3
INTRA-WARD VARIATIONS IN DIAGNOSIS
BY WARD ADMINISTRATOR,
IN NUMBER AND PER CENT

Diagnosis*	X		Administrator Y		Z	
	No.	Per Cent	No.	Per Cent	No.	Per Cent
Organic Disorders	8	10.7	7	10.3	2	4.2
Affective Disorders	6	8.0	3	4.4	2	4.2
Schizophrenia	22	29.3	15	22.1	32	66.7
Psychoneurosis	26	34.7	27	39.7	4	8.3
Characterological	9	12.0	11	16.2	3	6.2
All Others	4	5.3	5	7.3	5	10.4
Total	75	100.0	68	100.0	48	100.0
$X^2 = 31.13$						
$P = .01$						

* For purposes of analysis, diagnostic categories were combined into three groups, schizophrenia, all other psychoses, and all non-psychoses.

TABLE 4
LENGTH OF HOSPITALIZATION AND
TREATMENT PROCEDURES BY DIAGNOSIS

Diagnosis	N	Hospitalization		Treatment Procedures (%)		
		Mean	No. of Days	Electroshock	Chlorpromazine	Psychotherapy* No. of Obs. Per Cent
Schizophrenia	47	100.6		8.5	48.9	2111 2.84
Psychoneurotic	34	82.0		2.9	2.9	1351 3.40
Characterological	24	38.3		—	12.5	518 5.41
Affective	15	77.5		26.7	26.7	564 1.77
Organic	10	47.8		—	20.0	382 3.14

* Based on observations of the activities of patients on the wards and the percentage of observations during which the patients were found to be in psychotherapy session.

received 31 shock treatments.

Drug therapy prescription varied even more widely with diagnosis. One of 34 psychoneurotic patients was given Thorazine (16 days in all) whereas 23 of 47 patients classified as schizophrenic received chlorpromazine. These 23 received chlorpromazine for an average of 21.5 days. The remaining cases again occupied intermediate positions.

3. The percentage of patients in each diagnostic grouping receiving psychotherapy also varied considerably. These particular figures were difficult to obtain since no such record is available on the patients' charts. Instead, as a result of a study of ward behavior based on nearly 12,000 patient-observations, it was possible to arrive at the percentage of these observations during which patients in the various categories were receiving psychotherapy (6). These estimates are based only on observations conducted during the "working" day, and are exclusive of lunch, visiting, and evening hours as well as weekends.

The data indicate that under 2% of the 564 observations of affective patients were receiving psychotherapy whereas psychotherapy sessions accounted for 2.8% of the 2,111 observations of schizophrenic patients, 3.1% of the 382 observations of organic patients (2 were alcoholics), 3.4% of the 1,351 observations of those diagnosed as psychoneurotic and 5.4% of the 518 observations of the characterological patients.

DISCUSSION AND SUMMARY

These findings provide concrete statistical affirmation for the view that despite protestations that their point of reference is always the individual patient, clinicians in fact may be so committed to a particular psychiatric school of thought, that the patient's diagnosis and treatment is largely predetermined. Clinicians, as indicated by these data, may be selectively perceiving and emphasizing only those characteristics and attributes of their patients which are relevant to their own preconceived system of thought. As a consequence, they may be overlooking other patient characteristics which would be considered crucial by colleagues who are otherwise committed. This makes it possible for one psychiatrist to

diagnose nearly all of his patients as schizophrenic while an equally competent clinician diagnoses a comparable group of patients as psychoneurotic.

It is important to note, however, that these differences in diagnosis occur primarily with respect to cases not clearly or easily traceable to organic causes (*i.e.*, schizophrenia, psychoneurosis and character disorders). This obviously suggests greater opportunities for divergent points of view because of the lack of those objective criteria usually associated with diseases precipitated by some type of organic impairment. Whereas the latter can be more readily discerned with the aid of relatively reliable technical instruments (*e.g.*, EEG), schizophrenia, psychoneurosis and character disorders suffer the absence of such nosologic criteria. In addition, organically impaired patients usually exhibit behavioral patterns more clearly associated with organic malfunctioning whereas the more purely functional categories require more arbitrary and hence, less objective distinguishing criteria.

Schizophrenia is particularly exposed to an additional difficulty which makes it a less reliable diagnostic entity. This difficulty is linked directly to the differences in psychiatric orientations discussed above and is relevant specifically to the psychoanalytic point of view. It was discerned that the greater the commitment to an analytic orientation, the less the inclination toward diagnosing patients as schizophrenics. This pattern is traceable to two somewhat related factors intrinsically associated with the analytic position. On the one hand, these psychiatrists are less concerned with diagnosis *per se*; they tend to argue that a diagnosis places unwarranted restrictions upon a more "complete" exploration of whatever psychological mechanisms are at work or related, presumably, to a patient's illness. Secondly, is the more pronounced "liberal" philosophy espoused by this school of psychiatric thought which, seemingly, operates to create an inhibitory attitude toward "unnecessarily" and "unjustifiably" applying a label which seemingly has deleterious connotations and, therefore, apparently undesirable consequences for the patient so diagnosed.

Under present conditions, therefore, both diagnosis and the related care and treatment procedures tend to become more or less an adjunct of psychiatric orientation whereas the treatment program should be consequent on the diagnosis and a function of it. The alternative to present psychiatric classification problems should not, as some have suggested, be the elimination of diagnostic categories and the de-emphasis of classification procedures, but quite the reverse. What is needed is (a) a reconsideration of the means of eliminating the obvious biases connected with commitment to schools of psychiatric thought as an obstacle to the development of a taxonomic system of diagnosis, (b) increasing attention to the development of a standard nomenclature and (c) most important, emphasis on the development of objective, measurable and verifiable criteria of classification based not on personal or parochial

predilections but on behavioral and other objectively measurable manifestations. Until such time as these criteria are available, research on the incidence and prevalence of the various disorders and on their etiology, treatment, and prevention will continue to be hampered and impeded.

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AGGRESSION, GUILT AND CATAPLEXY

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Cataplexy can occur in the wake of an impulse of aggression. To be sure, the commonest precipitant of cataplexy is laughter, but aggression is not far behind. Since my first paper on "Aggression, Guilt and Cataplexy" (7) much additional material has come to light, and some of it will be presented here.

Aggression of any degree may be an effective stimulus, provided only it is associated with guilt. It may be overt, as in the common instance of the father stricken with cataplexy when he raises his hand to punish his child. It is no crime to punish a child, but the father is prey to conflicting emotions, and he is not exaggerating too much when he says, "This hurts me more than it does you."

The aggression may involve killing yet be socially acceptable, as when the hunter aims his gun or the angler hooks a fish. Though such killing is accepted by society, it can stir up feelings of guilt. Cataplexy has even followed the squashing of a bug (3) or the shooting of a dog out of the kitchen (8). Finally, the aggression may be that which expresses itself in sport. In some sports aggression is undisguised, as in boxing, where the aim is to hurt one's opponent. In others it is symbolic, as in baseball, where an infielder "kills" the baserunner by tagging him, or in tennis, where a man "murders" his opponent with a wicked volley.

The recent literature abounds with cases to illustrate all these points.

Cataplexy occurred in *fishing* in cases reported by Bonstedt (1), Dobin and Smith (5) and Yoss and Daly (15), and in *hunting* as well as fishing in the case of Thigpen and Moss (12).

Case 1.—A remarkable incident was reported by a narcoleptic in Nevada who has sent me a detailed account of his case. He has had attacks of cataplexy when hunting and fishing as well as from laughing. He reported the fol-

lowing incident: "One night after working late, I got home and when I turned the light on in the kitchen I saw a mouse running around the edge of the room. Thinking I could disable or kill it by hand, I picked up the nearest thing I could reach, a butcher knife, and headed for the mouse. When I got near the corner, I thought I had him trapped. I dropped to my knees and tried to strike him with the knife but my arms fell limp to my sides after one strike and I couldn't continue the 'hunt.'"

It has been said that hunting and fishing evoke cataplexy because they are so exciting. I submit that this explanation misses the point. There is little or no excitement when one squashes a bug, yet this sufficed to provoke an attack in the case of Brock and Wiesel (3). By contrast, there have been cases in which the greatest possible excitement failed to elicit an attack. In Bonstock's case (2) the patient had an attack when he got ready to fire at a duck but not when he tried to stop a runaway horse. This is a crucial case. In trying to stop a runaway horse—as exciting an undertaking as one can imagine—a man is not held back by guilt, as he is when he strikes his child or kills an animal, even if only a bug.

Another negative incident occurred in the next case.

Case 2.—A subway motorman began to have attacks of cataplexy at the age of 21. He has never had any sleep attacks. One day he was bringing his subway train into a station in the Bowery in New York. A drunk was lying asleep in the trough between the rails, and a porter was standing at the near end of the platform waving a broom frantically to flag the oncoming train. When the patient saw the porter, he immediately applied the emergency brake, and the train screeched to a halt *after* the first car had passed over the sleeping man. The patient saw the man as the car passed over. Though he knew the trough was deep enough to protect the man, he was greatly excited and tense, but did *not* have an attack of cataplexy. He proceeded without hindrance to take the steps necessary in the situation. This incident occurred at the age of 37. It was before he first saw me, and he was not on any medication at the time.

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A significant negative observation was recorded by Daniels (1). The patient, a male epileptic, had once beaten up a man who had made fun of his sickness, and on this occasion he was not stricken with cataplexy. There is no guilt, hence no let or hindrance, when one punishes someone heartless enough to make fun of a sick man.

To turn to sports in which there is no real killing—in Thigpen and Moss' case (12) there was cataplexy in boxing and football as well as in hunting and fishing.

Case 3.—A policeman, born in 1916, began to have symptoms of narcolepsy in childhood. In addition to sleep attacks he suffered from cataplexy on laughing and on raising his hand against his children. He gave many examples of cataplexy in sport. **Boxing.**—In his youth the boys tried to interest him in boxing. He was a good athlete, and "I knew all the rudiments of boxing, but I could never get any pleasure out of it. I could defend myself but I could never be aggressive. I could never put any enthusiasm into hurting the other guy." He never had a clear cut attack of cataplexy in boxing, i.e. his knees did not buckle, but in the light of the history his inability to be aggressive is significant. **Football.**—From 18 to 21 he belonged to a football team. Three or four times, when chasing a runner whom he hoped to tackle, his knees buckled and he fell. "I'd sit there a few seconds and then I'd get up again." **Swimming race.**—In 1943 he and his wife and a woman friend were at a beach. The woman challenged him to race to the float (50 yards offshore) and back. An expert swimmer, he thought nothing of the short distance. "I raced out in fine style, but on my way back, about three-quarters of the way back, I just ran out of gas." At this time he was well ahead in the race. "I was banging away, and all of a sudden I just got weak, didn't have any power in my legs. I was barely able to make it to shore. I just about dragged myself out of the water and fell down on the beach. My wife asked me what was the matter and I could just about talk. I said, 'I don't know. I'm exhausted.'" He fell asleep on the beach and when he woke up he felt alright.

The patient and his wife were puzzled by this incident and blamed a glass of beer he had had before the race. Of course they were wrong. The imminent victory over his opponent must have triggered the attack.

Incidentally this man, who married in

1942 and now has 3 children, said that in the early years of his marriage orgasm always precipitated a cataplexy. He became limp all over and could not move or speak for a minute. Now, however (1958), he has coitus once a week without incident. Cataplexy on orgasm is well known (9).

In the realm of the milder sports, Swanton's patient had attacks of cataplexy when playing tennis, golf and hockey (11). Yoss and Daly (15), in a review of cases at the Mayo Clinic, found the case of a woman who had "reported that she could not play cards with her son because 'every time I get a good hand he can see my face sag.'" Any victory over an opponent, even if only in cards, may gratify unconscious aggressive drives and thus arouse guilt.

Important is the fact that in many cases of cataplexy it is aggression that has evoked the first attack. This is the more remarkable seeing that it is laughter that is the commonest precipitant of cataplexy. In Van Bogaert's case (13) the patient had his first attack of cataplexy when he reprimanded one of his employees. In Case 1 of Speirs and Speirs (10) the first attack occurred when the patient scored a direct hit in a snowball fight. In Case 1 of Wenderowicz (14) the patient, a farmer, had his first attack when he was about to whip his cow in anger. A week later the second attack occurred when he wanted to whip his horse. Next day he had his third attack in an argument with his brother. This patient had cataplexy on pleasant as well as unpleasant emotions, yet his first 3 attacks were evoked by aggressive impulses. In any seizure disorder the circumstances that evoke an attack are important, but those that evoke the first attack are doubly so.

It is plain that a display of aggression, when associated with killing or its symbolic equivalent, hence with guilt, may elicit an attack of cataplexy. We have here an example of conditioned inhibition (7). Conditioned inhibition occurs in man whenever we strive to suppress an impulse in circumstances which render it impermissible. Thus it is a natural impulse to run away from danger, but a soldier in battle must suppress it (6) and in these circumstances he may show clinical manifestations of inhibition. The simplest example of condi-

conditioned inhibition in nature is the dog that learns from painful experience that while it is generally safe to chase and tangle with small quadrupeds, it is not safe to do so if the animal is a porcupine. The conditioned inhibition that develops from this painful experience is the same in principle as that of the man who feels a pang of guilt when he raises his hand against his son. Of course there is a difference in the quality of the pain: the dog wants to avoid physical pain, while the man has a pang of conscience, but in either case an inhibitory impulse arises to check the positive impulse.

AGGRESSION MASKED AS PLAY

When cataplexy follows a display of naked aggression, as when a father raises his hand against his son, we may assume that the hostile impulse, being associated with guilt, evokes a counter-impulse, and the ensuing cataplexy is a manifestation of conditioned inhibition. This is also true when the aggression is only symbolic, as in tennis. The case is otherwise with the cataplexy that follows laughter, for this is a mystery and we do not know its pathogenesis. But there is one exception, the laughter that is interwoven with aggression. Some laughter is hostile, as in Zehr's Case 2, where the patient had an attack of cataplexy while laughing at a deafmute who was trying to express himself (16). In this instance cataplexy must have been of a piece with that which occurs in other aggressive situations.

Aggression may be playful. Play may serve as an outlet or vehicle of aggression, as one can see in the playground, where, for example, small boys make good use of their pistols. Two striking cases are submitted.

Case 4.—A narcoleptic woman of 28 began to have attacks of cataplexy at 17 and sleep attacks a year later. The initial symptom occurred when she played a practical joke on her sister Helen. Helen likes soft chewy candy and detests hard candy. There was a box of chocolates in the house and Helen reached for it, saying, "I'd like a nice soft piece." The patient said, "Here, take this one," pointing to one she knew had a hard center. Helen bit into it and made a wry grimace. The patient laughed and was about to cry "I fooled you" when suddenly "I got weak, my head dropped ;

I tried to cry out but all I could get out was a little squeak."

A devilish trick indeed, to deceive Sister into biting into a hard piece of candy. It would not rate high in a catalogue of sadistic behavior. But it sufficed to evoke an attack of cataplexy, one that proved to be the initial symptom of a narcolepsy. One is tempted to think that the motive force here was not the laughter, but rather the unconscious hostility concealed behind the mask of an innocent prank.

Case 5.—A man of 23 in Montana, who sent me an account of his narcolepsy, wrote: "When I run and play with my children, they need never fear that I'll catch them, for the moment I'm about to do so I collapse." The patient, chasing his children in play but handicapped by his susceptibility to inhibition, could not exercise aggressive impulses that were purely playful and succumbed instead to inhibitory counter-impulses.

SUMMARY

Cataplexy may be evoked by impulses of aggression associated with guilt. The aggression may be naked and undisguised as in hunting and fishing, and in boxing, where the object is to hurt and paralyze one's opponent. Or it may be symbolic, as in those sports where the object is to defeat the opponent, not to hurt him. Finally, it may only be that benign aggression that is expressed in practical jokes and some kinds of play. Cataplexy, in all these cases, is a manifestation of conditioned inhibition, a response to the guilt that attends aggression even when it is only unconscious.

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THE PHYSIOLOGICAL BASIS OF THE TREATMENT OF DELIRIUM TREMENS¹

HENRY KRYSTAL, M. D.²

This study was designed to re-examine the rationale of the treatment of delirium tremens. Clinical observations as well as reports of other workers(1-3) suggested a particularly significant disturbance of the water and electrolyte balance, therefore a small pilot group was studied from that aspect. The attempt was made to integrate the psychological aspect of this complication of alcoholism with the data obtained by other techniques with the aim of establishing the physiological basis of the treatment of delirium tremens.

CLINICAL OBSERVATIONS

The group studied consisted of 700 patients with diagnosis of Delirium Tremens (D.T.) which represented all of the D.T. cases treated at the Detroit Receiving Hospital in the years 1954 through 1956. Of these cases, 82% were men and 18% women. Twenty-four percent were married. The ages ranged from the second through the sixth decade, with the majority between 30 and 60 years of age. Seventeen percent of the group were admitted to services other than psychiatric with a variety of illnesses, and developed D.T. only after a couple of days, as a rule. The mean duration of D.T. was 3 days, but the average hospital stay exceeded 5 days because of other illnesses. The frequency of those concurrent conditions was conspicuous. The following data were obtained by the review of 214 consecutive admissions of D.T. cases.

The patients had often been tremulous and insomniac for 1-2 days before admission. On the first day in hospital, 40% of the patients had hallucinations, 58% showed

	Number of cases	Percent of cases
Patients with clinical evidence of gastritis	86	40
Patients who had one or more illnesses other than gastritis	148	69
Incidence of individual syndromes:		
1. Infections	45	23
2. F.U.O.	5	3
3. Traumatic Injury	50	23
4. Liver disease (clinically)	24	12
5. Convulsions	18	9
6. Anemia	16	8
7. Chronic brain syndrome	6	3
8. Schizophrenia	6	3
9. Other illnesses	15	7

marked tremors, and 60% were uncontrollably anxious. Vomiting was noted in 40% of the admissions. Some degree of confusion and disorientation was found in all. On the second and third day, the percentage suffering of those symptoms fell markedly, but a considerable number showed *marked* anxiety, confusion, and tremors. Some patients admitted in "Impending D.T." became delirious on the second or third day.

ELECTROLYTE STUDIES

Electrolytes were studied on 45 consecutive men (ages 35-55), admitted in full-blown D.T., but without any evidence of liver failure or ascites. All these men were chronic alcoholics, many being actual "skid row" inhabitants. Electrolyte studies tabulated in the respective diagrams can be briefly summarized as follows:

1. *Sodium* (Fig. 1). The average of all determinations was below normal on the second, third and fourth days. The average then rose to the lower limits of normality. Although the averages were below normal (137 meq./l. on the first and second days) there was a wide span of results with some patients grossly hyponatremic.

Since all the patients received some sodium, and only very few (specifically 5 determinations) were above normal, one must consider the deficiency clinically significant. The wide range of results, how-

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FIGURE 1
SERUM SODIUM LEVELS OF D.T. PATIENTS
(EACH DOT REPRESENTS ONE DETERMINATION.)

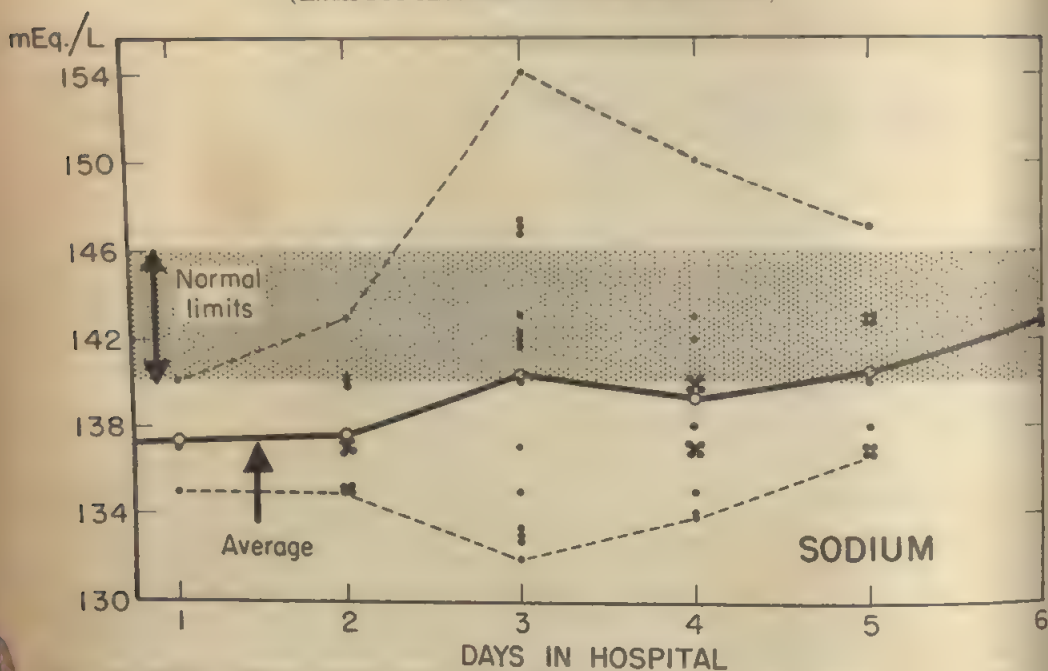
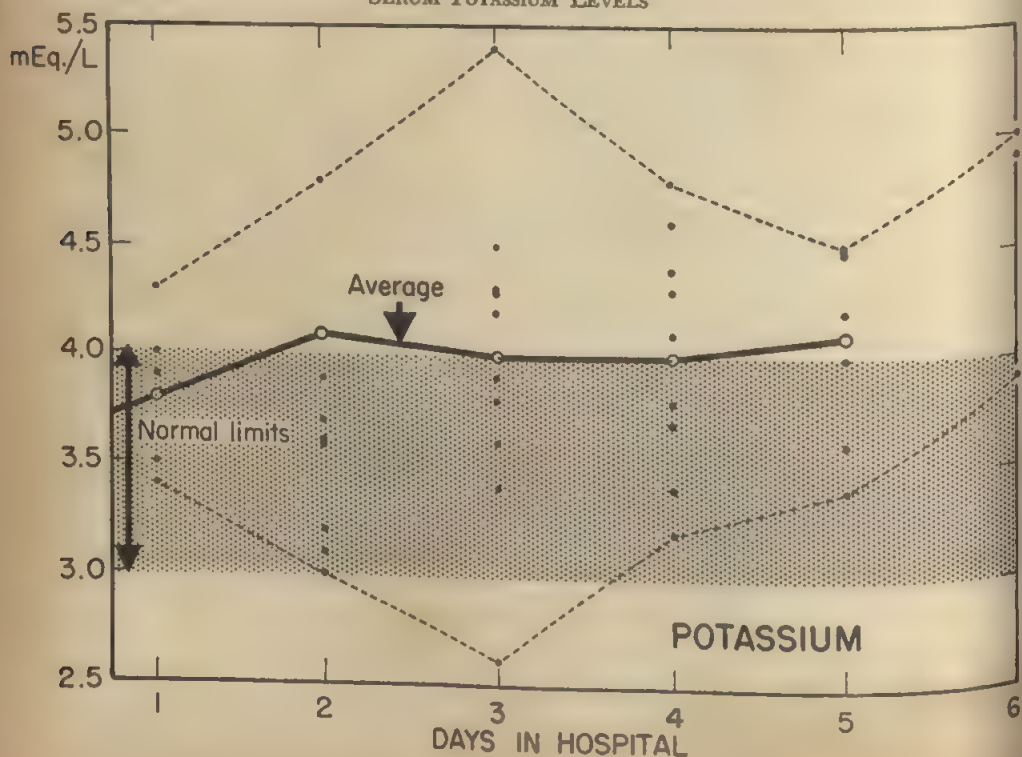


FIGURE 2
SERUM POTASSIUM LEVELS



ever, indicates much individual variation. The lowest sodium results were 135, 132 and 134 meq./l. on successive days. Sodium deficiency may be suspected in the D.T. patient—but its severity has to be individually evaluated for accurate replacement. Serum chloride determinations closely paralleled the deficiencies of sodium.

2. *Potassium* (Fig. 2). In contrast to the sodium and chlorides, potassium averages tended to be either in high-normal, or above-normal ranges. Though the average was only slightly above normal only one test result was below normal, while a number of results were above normal. The highest potassium concentration reached 5 meq./l.

3. *Magnesium* (Fig. 3). Serum magnesium concentration was determined by the titian yellow colorimetric method: the normal range was between 1.3 and 1.9 meq./l. The magnesium averages were consistently low—with 1.5, 1.2, 1.3, 1.2 and 1.2 meq./l. on consecutive days. There was not a single determination above

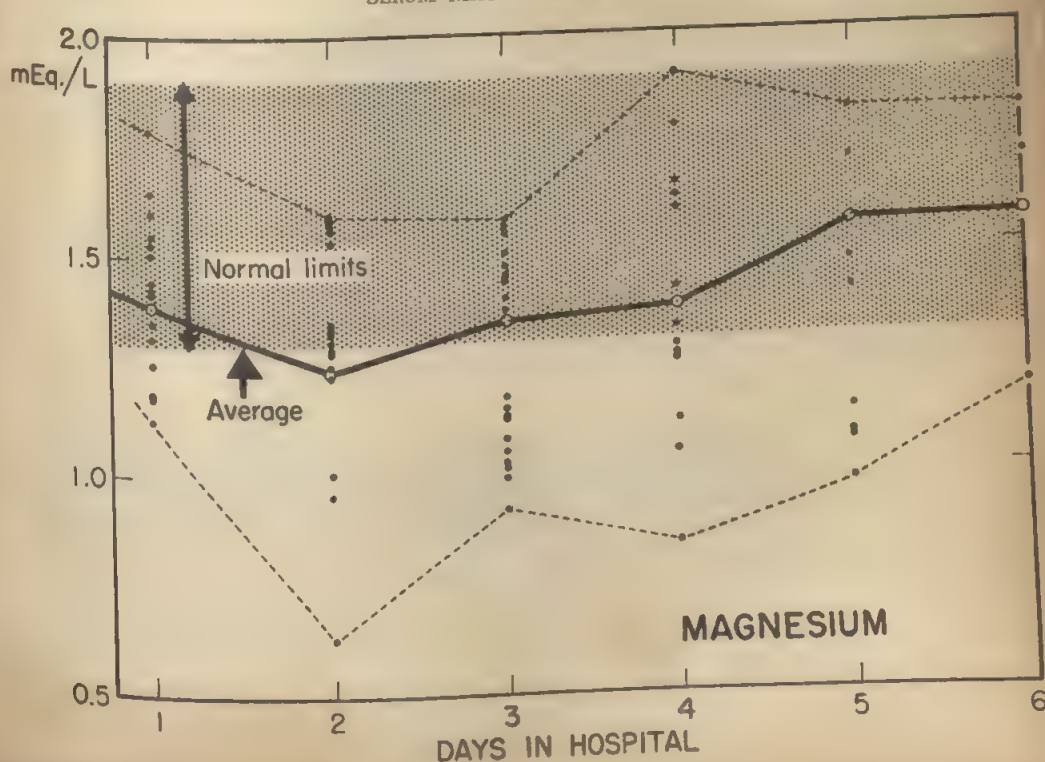
normal, but many below normal. The lowest results were obtained on the second day: a serum magnesium of 0.99 meq. l. The absence of above normal magnesium levels, in contrast to the sodium or chlorides is explainable by the fact that saline was administered intravenously, whereas no magnesium was administered to this group.

4. *Hematocrit* (Fig. 4). Although only a small number of the determinations of the volume of packed red cells was performed, they make possible the following observations: The R.B.C. volume tended to be high (an average of 50% on admission). This finding is particularly significant when confronted with the previously reported high rate of anemia. Thus, the patients tended to show hemoconcentration on admission, but after therapy was started, the volume of the red cells came down to the normal limits.

DISCUSSION

Delirium is not a specific disease, but a disturbance of consciousness(3) which,

FIGURE 3
SERUM MAGNESIUM LEVELS



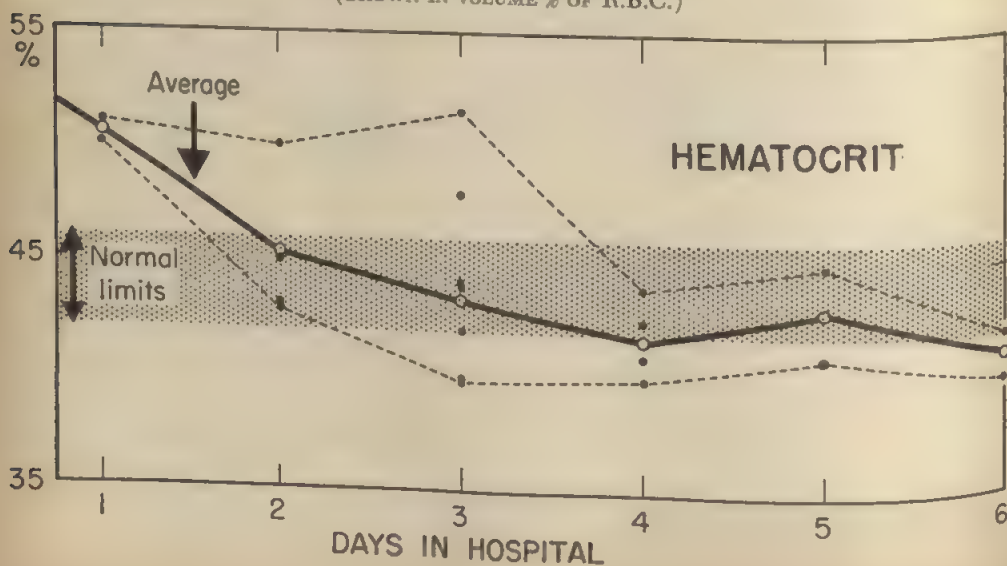
like the related condition of toxic psychosis may be caused by any physical or chemical influence which interferes with the metabolism or colloidal state of the brain. The development of delirium is favoured by the presence of diffuse brain damage, the existence of an unbearable reality situation, particularly in individuals with poor object-relations and reality testing. The above mentioned factors lead to the confusion. The anxiety-laden hallucinations of the D.T. patient reflect his terror in the face of his own aggression, so intense that it can only be handled by projection, and is experienced as endangering his life. The alcoholic's insatiable demands tend to threaten and "exhaust" his attending personnel who turn against him angrily and reject him. This behaviour serves both to "externalize" his aggression, and to act out the basic conflict of the alcoholic's life.

Although it has been conclusively demonstrated that a variety of underlying problems may lead to problem drinking (4, 5, 6), the formulations of Sandor Radó concerning the "pharmacothymic personality" (7, 8) have special pertinence in relation to the genesis of D.T. Based mainly on his work, and with some oversimplification of the problem for the sake of making

a generalization, the following observations are represented in Fig. 5. In the act of escaping depression and anxiety into a pharmacogenic elation, the addict gives up the reality-oriented regime of the ego, replacing it with a dependence on the drug. However, the euphoriant effect of the drug becomes diminished with the passage of time. The fact that alcohol, like all other drugs, loses this effect after a period of *continuous* use, and particularly in the presence of illness or "troubles" is not fully appreciated by physicians. When the alcoholic can no longer get relief from his anxiety and depression by drinking (a state commonly preceding D.T.) he is thrown into a rage and panic which he often describes as feeling abandoned by the "whole world." All his tenuous object-relations are experienced as sources of gratification, which alcohol supplies best of all, if only transiently.

In the resulting *pharmacothymic crisis* he tries to master his desperate state in one of the following ways: 1. Flight into withdrawal from the drug into a drug-free interval, thus restoring the potency of the drug; 2. Sadistic or masochistic acting out (explaining the conspicuous frequency of the alcoholics getting in fights—*cf.* the above reported incidence of traumatic in-

FIGURE 4
THE HEMATOCRIT DETERMINATIONS
(SHOWN IN VOLUME % OF R.B.C.)



any before admission: 23% of all cases);
 Psychosis. The psychosis may be an
 "alcoholic hallucinosis" or delirium tremens. It seems that the presence of physiological deficits, such as we have observed

(Figs. 1-4) favors the development of the latter. The pharmacothymic crisis represents a *great stress to the organism*. In delirium tremens, the multiplicity of deficiencies clouds the picture. In contrast, withdrawal symptoms attending narcotic addiction, can be seen to be a gross activation of the autonomic nervous system (with symptoms of either sympathetic or parasympathetic over-activity predominant), as well as the adrenal response to stress. If the latter fails, the narcotic addict shows a loss of weight, fall in blood pressure and other signs of adrenal deficiency.

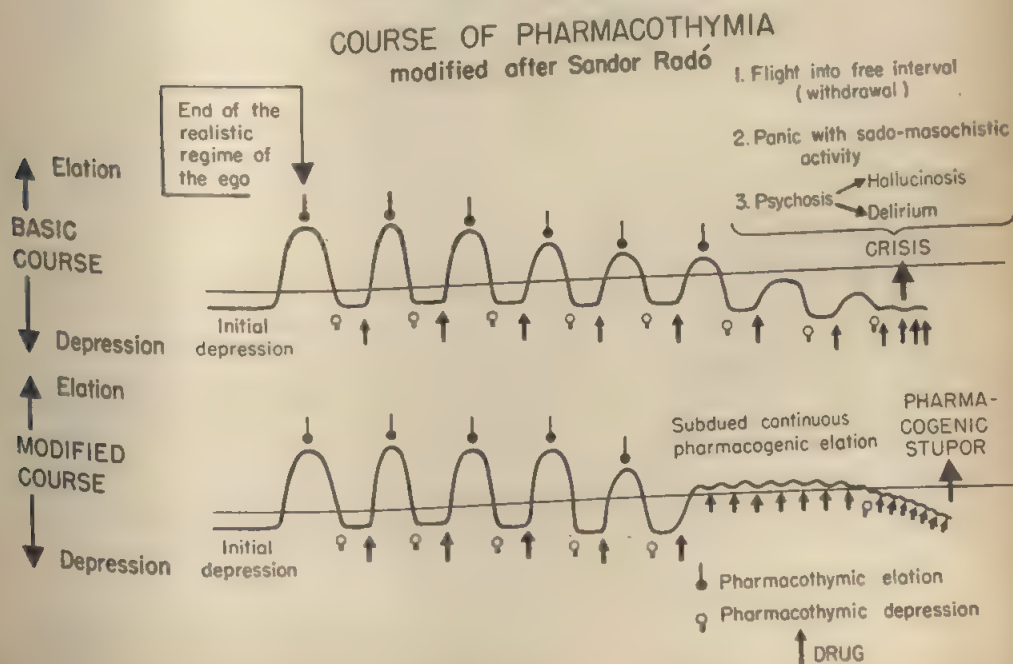
Our next view of the patient in delirium tremens is also historical. As demonstrated above, 40% of patients in this series developed symptoms of gastritis before admission. Typically the patient lost his

appetite, and had a food intake often limited to alcohol and coffee or water for as long as 2-3 weeks, and for a variable number of days before admission suffered vomiting and all the other symptoms common to alcoholic gastritis and peptic ulcer. The systemic consequences of the vomiting are: 1. Loss of water; 2. Loss of electrolytes; 3. Inadequate intake of food, *particularly vitamins*. Water depletion alone results in symptoms somewhat different from those of combined water and electrolyte depletion (Fig. 6). Whereas loss of water alone results in dryness of membranes, fever and concentration of urine, depletion of water and sodium results mainly in symptoms related to hypovolemia, namely hypotension, oliguria, as well as muscle cramps(34).

Flink(9, 10), Suter and Kingman(11) show that in alcoholics with delirium tremens, there is a very high incidence of serum magnesium deficiency. This is confirmed by our findings, as shown above.

FIGURE 5

THE COURSE OF PHARMACOTHYMIA
 (FROM SANDOR RADÓ: *Psychoanalysis of Behaviour*, COURTESY OF THE AUTHOR AND GRUNE & STRATTON INC.)



What part of the symptomatology of D.T. may be due to magnesium deficiency can only be surmised on the basis of the following findings in experimentally produced magnesium deficiency in animals (9, 10): 1. Apprehension and anxiety; 2. Confusion; 3. *Muscular tremors*; 4. Delirium; 5. Peripheral neuritis; 6. Gradual increase in C.N.S. irritability with possible progression to convulsions, coma and episthotonos.³ Experimental and clinical evidence in magnesium deficiency produced in man by prolonged intravenous therapy shows that magnesium deficiency alone can produce symptoms thought to be part of delirium tremens such as anxiety, tremor and even delirium itself.

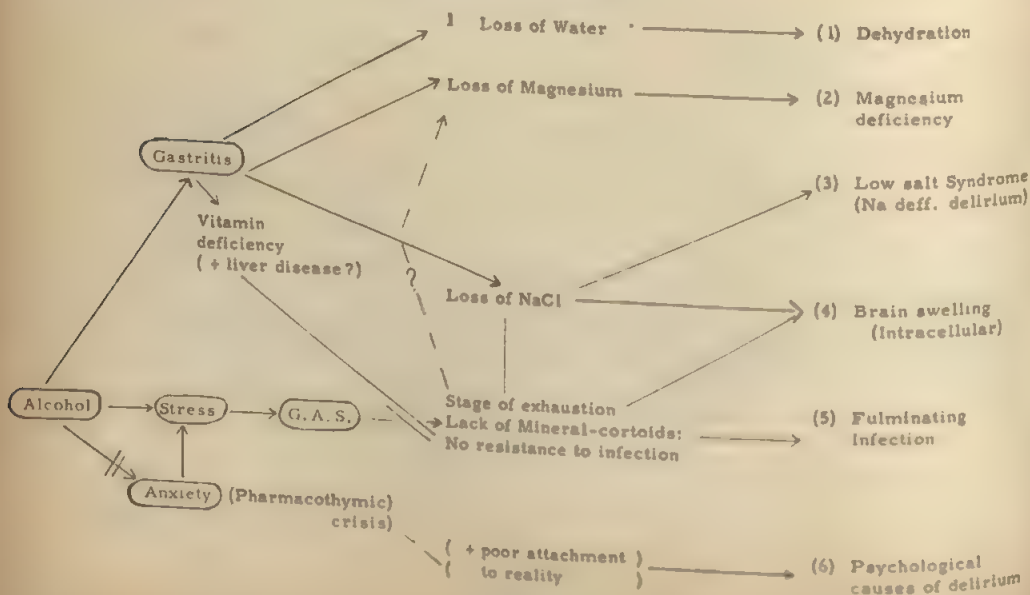
As is noted above, the alcoholic shows frequent clinical evidence of sodium depletion. With gastritis, vomiting, and poor food intake, sodium deficiency is marked, particularly so in hot weather. This fact alone probably accounts for the greater

³ Symptoms of magnesium deficiency, like that of calcium, are related to its concentration in the serum in an available form. Alcoholics may have chronic serum magnesium deficiency, which as suggested by animal experiments, may also cause peripheral vasodilatation.

mortality from D.T. in the summer months (12). Sodium deficiency in the range of 120-130 meq./l., has been shown to be associated with delirium (14). Although our determinations do not fall in ranges quite so low, there is possibly a potentiation of the deliriogenic effect by multiple deficiencies as observed in our patients, and particularly in the presence of brain damage. While gastritis is demonstrable in only 40% of our patients, 52% have sodium deficiency and 78% have some electrolyte depletion. The clinically noted severity of electrolyte deficiencies suggests that some other factors must be operating. For the answer to this question we have to look to the 60% of D.T. patients who have no antecedent gastritis. Those develop delirium often after a hospitalization for an organic illness or traumatic injury (27). We can now recall that 68% of all patients show other illnesses when hospitalized for D.T. Each of such illnesses imposes a stress on the patient's organism. Traumatic events often precede the onset of D.T. (*e.g.* the loss of a job or love object). When such a history is not obtainable it is the *pharmacothymic crisis* which constitutes the stress.

The chronic alcoholic, when subjected

FIGURE 6
THE PHYSIOLOGICAL DISTURBANCES FOUND IN
DELIRIUM TREMENS AND THEIR
POSSIBLE GENESIS



to stress, is unable to respond normally. He develops *hyponatremia* and *hyperkalemia* (Figs. 1, 2, 3) and is *unable to resist infections*, which very often spread to involve large portions of organs, and all too frequently become fulminating and deadly in spite of the use of antibiotics. In the current series of 700 patients, there were 16 deaths (2.5%). Five of these were caused by infections, in spite of adequate treatment with antibiotics. Of these 5, 4 had leukocyte counts of 7,000 or less in the presence of overwhelming infection such as pneumonitis or peritonitis. The patient's inadequate fibroblastic (inflammatory) response had failed to wall off the invading organism. These two phenomena (salt depletion and poor fibroblastic response) following a major stress suggest an inability to mobilize *prophlogistic mineral corticoids*(13).

Why the alcoholic reacts thus, is not definitely known. Research in this area seems to implicate vitamin deficiency(16, 17, 18), as well as the effect of chronic liver disease(21), chronic stress due to anxiety(20), and the direct effect of alcohol on the pituitary-adrenal axis(18). The impression gained by this study is that the alcoholic in D.T. has a normal or high level of antiphlogistic glucocorticoids but a deficiency of prophlogistic mineral corticoids. Flink's preliminary findings are compatible with such a state, as he reports high blood 17 hydroxycortisone in D.T.(22). A high cortisone, and low prophlogistic mineral corticoid level would be compatible with the electrolyte deficiencies, and lack of resistance to infection we observed—it would also favour peptic ulcerations—so common in the chronic alcoholic. D.O.C. (11 Desoxycorticosterone, a synthetic prototype of the prophlogistic mineral corticoids [14, 15, 18]) inhibits the anti-inflammatory effect of cortisone mol for mol.

As in an Addisonian crisis, the alcoholic in adrenal insufficiency may progress from hypo-osmolarity of the extracellular fluids to *intracellular overhydration*. This is the etiology of the pathological observation established as a fact for over 100 years: That the *brains of alcoholics in D.T. are often swollen when seen in autopsy*(25, 26, 27, 45). The brain encased in the rigid crani-

um, cannot expand freely when swollen. The result is an increase in intracranial pressure. Brain swelling produces the most serious and prolonged symptoms in this group of patients. It may produce convulsions, cause coma, and interference with vital functions. Initial nuchal rigidity may progress to opisthotonos. The patient, if not comatose, is constantly hallucinating, terrified and shows grasping or scratching motions of his hands. Cranial nerve palsy, transient, and fixed conjugate deviation have been observed. Once the brain swelling is fully established, it seems to subside slowly and the patient may be comatose or very sick for as long as two weeks, if he survives. As mentioned above, the total number of deaths among the 700 D.T. patients was 16, 5 of which were due to infection. Of the remaining 11 patients, 6 died of *causes not directly attributable to D.T.*⁴ The remaining 5 cases had clinical evidence of brain swelling (2 had autopsy confirmation). *When a patient dies of D.T. rather than with it—the cause of death is brain swelling or overwhelming infection.* Sceletch and Biefield, who studied autopsy results of patients who died of D.T. in 1916 (when the mortality rate was 75%) stated that the "constant autopsy findings" were "cerebral edema, narrowing of the yellow rim of the suprarenal gland (due to diminution of cholesterol content of the gland)—even to its complete disappearance . . ." (45).

CONCLUSIONS

The above considerations force one to view delirium tremens as having multiple determinations (Figs. 6 and 7) which result in at least 6 clinically recognizable etiological factors: 1. Dehydration; 2. Magnesium deficiency; 3. Sodium and chloride deficiency; 4. Brain swelling; 5. Fulminating infection; 6. Panic state (pharmacothymic crisis).

Good clinical judgment dictates that each of these conditions be recognized and treated *specifically*. The difficulty is created by the overlapping and "blending" of the

⁴ The causes of death of *these 6 patients* were as follows: 2 each, D.O.A.=not known, and liver failure, and one each due to pulmonary embolism and enterocolitis with hemorrhage secondary to chronic liver disease.

respective symptoms with the non-specific symptoms of delirium. Figure 7 was designed to review the diagnostic and management recommendations. It is self explanatory, and only a few points need further discussion. The analysis of our sample shows the correlation coefficient (r) between the sodium and magnesium serum levels to be -0.43 (Student's $t = 2.86$ indicating the correlation to be significantly different from 0 at the 1% level.) The cause for this inverse relation is not yet known, and needs further study. The emphasis, for the purpose of this discussion is on the necessity of separate and independent diagnosis of these electrolyte deficiencies, and the adjustment of therapy accordingly.

Magnesium is best replaced by intramuscular $MgSO_4$ 20-50% solution. As much as 8 gm. of magnesium per day, in divided doses may be given (9, 11, 25). Sodium and

chloride deficiencies have to be replaced, early in the treatment, intravenously, because of the vomiting. This is a reliable, and time-honored part of the treatment. At the same time, from the very beginning, vitamins are given, to enable the body to *reconstruct its enzyme systems*. Pending the resumption of normal adrenal function, signs of intracellular overhydration (particularly brain swelling) or infection are an indication for the administration of desoxycorticosterone acetate (D.O.C.)! A gradual withdrawal of the drug is necessary to prevent an acute relapse. In milder cases, the oral administration of syrup of glycyrrhiza (1 oz. t.i.d.) or ammoniated glycyrrhizin U.S.P. (4 gm./d.) is quite satisfactory. The active principle is the ammonium salt of glycyrrhizic acid, which has a mild D.O.C.-like effect (28, 29, 30, 31 and 32).

Cortisone is considered contraindicated

FIGURE 7
THE SYMPTOMS OF THE DISTURBANCES FOUND
IN DELIRIUM TREMENS AND THEIR
RECOMMENDED TREATMENT

Dx	SYMPTOMS	Rx
Gastritis	-Anorexia, nausea, vomiting, pain	Ulcer Regime, Vitamins
Water Depletion	-Pinched, grey facies, dry mucus membr.) difficulty swallowing, oliguria, hyper-) thermia)	H ₂ O
Salt Depletion	-Headache, weight loss, weakness, dizziness) orthostatic hypotention, fainting, nausea,) cramps, blood pressure down, shock)	NaCl.
Mg. Depletion	-Anxiety, MM Tremors, periferal neuritis,) hyperreflexia, vasodilation)	MgSO ₄
Brain Swelling	-Preceded by periferal intracellular) overhydration (positive finger-print sign)) -Convulsions, generalized) spasticity, meningeal signs) possibly disturbed vital signs and) functions: B. P., Pulse, Temp.)	Glycyrrhiza D.O.C. C.S.F. drainage (?)
Diminished Resistance to infection	(high fever, toxicity)	Antibiotics
Anxiety	Hallucinations	(Paraldehyde (?) (Phenothiazine (derivatives (Meprobamate
	Insomnia	(Non-barbiturate (hypnotics

in delirium tremens. Its antiphlogistic effect may cause gastric hemorrhage, or cause infections to get out of hand (23, 24). There is also a possibility that cortisone, through the inhibition of phosphate reabsorption (33), may favor hypomagnesemia.

The last item in Fig. 7 is the problem of anxiety and insomnia. While it is usually necessary to use drugs for sedation of the disturbed patient, there is an important place for psychotherapy in the management of D.T. The impressions gained in this study are that the patient needs most urgently to reconstruct his reality testing *vis-a-vis* his terrifying aggressive wishes. The psychiatrist has, further, the function of helping the patient to own up to his great dependent needs. The demanding D.T. patient gains an opportunity to deal with those needs, if these are neither indulged indiscriminately and/or routinely nor rejected angrily thus paving the way for later outpatient psychotherapy. Reality-oriented psychotherapy may enable the patient to deal with the traumatic event that created the psychiatric emergency. The psychogenic aspects of D.T. need specific (psychotherapeutic) management, just as the other disturbances do. This can be augmented, *but not replaced* by the use of phrenotropic drugs.

In the treatment of drug withdrawal syndromes, including alcohol, it is necessary to distinguish the relief of the symptoms of withdrawal from the restoration of drug elation. The physician is obliged to relieve the symptoms of withdrawal, but the addict craves his lost euphoria. The consequence is that while his survival depends on the physician's understanding and treating the *physiological disturbance*, the alcoholic constantly demands a euphoriant drug. Paraldehyde is a case in point, where this demand is fulfilled without the doctor's awareness of it. Paraldehyde is a cyclic polymer made up of three molecules of acetaldehyde per molecule; 70-88% of it is metabolized in the liver by *depolymerization* to *acetaldehyde*, which is then oxidized to acetic acid (36, 37). Acetic acid has no effect on the brain (38). Acetaldehyde, however, is also the intermediate product in the metabolism of alcohol (41). Investigators in the field state that much,

if not all, of alcohol's effect on the brain—the *very action of intoxication*—is probably not an effect of alcohol, but of the acetaldehyde it becomes converted to (42, 43, and 44). With the use of paraldehyde we achieve the same effect as the clinicians of the past did with intravenous alcohol. We circumvent the gastritis and esophagitis preventing the alcoholic from getting large doses of alcohol, and supply enough acetaldehyde to produce a euphoriant effect. This is exactly what the addict does to himself in taking more and more of his drugs, until he becomes comatose. Thus the "modified pharmacothymic regime" of Fig. 5. As long as paraldehyde is being administered, the withdrawal from alcohol is not accomplished.

By far more dangerous, however, is the fact that the alcoholic sedated with paraldehyde ceases to have or complain of the symptoms of his physiological disturbances, and the doctor may neglect them. This takes an unfortunate toll in patients' lives. Of the 214 patients whose detailed chart study has been discussed, 145 were treated with several routines as they were admitted to various wards of the hospital. Every known treatment was used, including I.V. alcohol. Of those patients, 8 (5.3%) died. The remaining 69 were treated by the author, according to the principles of specific therapy as applied to D.T. in this paper. Not one of these patients died. Though this group is small, the results are statistically significant, even with provision for chance selection (Chi-square—5%), and compare favorably with the overall mortality of 2.5%. This improvement in results is not to be attributed to any one drug or procedure. The D.T. patient's chance for survival depends on his physician's application of the principles of *specific* psychiatric and physiological diagnosis, followed by *specific*, rather than a "routine" treatment.

SUMMARY

The current study involved the analysis of 700 cases of D.T., including a review of the causes of death of the 17 patients who succumbed to this illness. Forty-five patients were subjected to a study of their water and electrolyte disturbance.

Delirium tremens was found to be a

combination of a physiological disturbance and an emotional stress in an individual whose relation to reality is, at best, tenuous. The particular mental event precipitating delirium was felt to be the "pharmacodynamic crisis." The physiological disturbance was found to be *varied* and consisting of one or more of the following syndromes: 1. Dehydration; 2. Low serum magnesium; 3. Low salt syndrome; 4. Brain swelling. The last two, as well as the lack of resistance to infection, frequently found in delirium tremens, were assumed to be due to an inability to respond to stress. Owing mainly to a chronic vitamin deficiency, the alcoholic is unable to respond with the formation of desoxycorticosterone-like, prothogistic mineral-corticoids.

Methods of clinical diagnosis of the several physiological disturbances involved in delirium tremens were discussed, and suggestions were made to revise the management of this syndrome accordingly.⁵

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ALCOHOL IN THE IROQUOIS DREAM QUEST

EDMUND S. CARPENTER •

Seventeenth century Iroquois used alcohol to stimulate their mystical faculties. The various configurations around dreaming and the vision quest, present in their culture long before liquor was introduced, quickly became associated with it.

References to this association are common in the early literature. The most interesting is *Historie de l'Eau-de-Vie en Canada*,¹ a treatise by François Vachon de Belmont (1645-1732), Sulpician missionary to Indians near Montreal. To him it was a moral problem. He adhered to the normal Christian view of man as unique among the inhabitants of the earth in view of his rational soul. Reason made him the link between heaven and earth in the ordered chain of the universe. Reason, moreover, was the divine part, by means of which human beings knew God: it showed itself in poised stature, grace of habits, beauty of speech, and—most important from the point of view of theology—in stability through virtue. True, he believed in apparitions of celestial personages to favored mortals, but only within the Christian scheme. To him, the drunken pagan was a man subject to continual insurrection from his irrational parts within, and to constant siege by Satan from without. That the pagan experienced visions, he didn't doubt, but that these dream visitors could do anything but harm, he refused to believe.

Indians, he wrote, held that through intoxication they would "experience a new sort of elation that promptly and effectively achieved the end of taking them out of themselves."² This belief had its roots deep in the vision quest. The active soul provided the means of understanding the will of spirits by revealing in dreams their wishes and how to satisfy them. Self-study, dream cultivation and submission to dream control were dominant ideas of the inner life. Dreams were induced by both personal and professional practices: seclusion,

fasting, meditation. The dreamer interpreted them first, then had them divined by another, thus indicating their external, not inner, origin.³

The problem was this: the Jesuits, like most Christians, assumed that only moral answers which recognized man as a collective animal had any validity, and were unsympathetic to the fact that the Iroquois conceived such answers in personal terms, and knew the only ones they would accept would come out of the dark night of the vision quest. Hence, unlike the Jesuits, the Iroquois didn't regard the temporary loss of mental control as sacrilegious—but on the contrary, believed that by getting outside the ordinary human order, they would get inside a higher spiritual order, and thereby more intimately in touch with reality. They pursued the conviction that extreme, fringe situations had more validity than normal, central ones; that there was more reality in experiences achieved outside established social patterns than in normal ones occurring inside of them. Striving for excess through ecstasy, frenzy, drunkenness, they were led to the adoption of emotional, intuitive tests as the yardstick. An experience producing a big emotional bang was a valuable one, and became less valuable as what it produced decreased in intensity. By this standard, a scream was more significant than a thoughtful statement, and violent drunkenness was more real and significant than controlled, restrained behavior, however much more creative it might be in the long run.

Later on, I think, the emphasis shifted to the use of alcohol as a release—to reduce anxiety and liberate aggression.⁴ But at this early stage, acting on the conviction that the drunken trance was a genuine metaphysical revelation, the Iroquois used al-

³ Thwaites, 1896-1901, 10: 169-171; 11: 251; 42: 151-159, 195-199; 47: 181; 54: 97-99, 141.

⁴ *Ibid.*, 6: 253; 12: 13; 46: 103; 47: 183; 51: 125; 53: 191; 55: 85; 61: 159; 62: 65, 183; 67: 39; Kinietz, 1940: 344; Thwaites, 1904: 86, 92, 130, 148; Charlevoix, 1923, 2: 77; O'Callaghan, 1849-51, 1: 227; Boucher, 1883: 52.

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¹ Belmont, 1952.

² *Ibid.*, 46.

cohol to acquire spiritual power by stimulating mystical faculties "usually crushed to earth by the cold facts and dry criticisms of the sober hour . . . It makes him for a moment one with truth. . . This truth fades out, however, or escapes, at the moment of coming to . . . Nevertheless, the sense of profound meaning having been there persists."⁵

Sternly inhibited from any outward show of emotions by fear of retributory witchcraft, the 17th century Iroquois rode their emotions bareback under the protection of alcohol. Then in 1800, their prophet Handsome Lake, combining Quaker teachings with elements of the old faith, established the New Religion taught in the Long House today. In one version of his Good Message, 5 of the 130 sections are appeals for abstinence.⁶ Soon temperance groups formed within the faith. But in the first two centuries of contact with Europeans, there was little in Iroquois religion to promote temperance, and there was much to encourage alcoholic excess.

I believe this is an accurate summary of the position of the Jesuits, as revealed by their journals, and of the Iroquois, as revealed through the discerning, though prejudicial accounts of the Fathers. Neither, of course, had ever heard of Sigmund Freud or Social Work, but both had heard of God and spirits and so they thought and spoke in these terms, without recourse to words like reduction or catharsis. Their religion was the deepest thing in them. Its Dionysian features, common to many North American tribes, encouraged them to seek to attain, in their most valued moments, escape from the boundaries imposed on them by the five senses, to break through into another order of experience, to achieve excess in both ritual and personal experience, and to value the illuminations of frenzy, believing with Blake that "the path of excess leads to the palace of wisdom." The closest analogy to the emotions they sought was drunkenness, and so when alcohol was made available to them they gave it an honored role.

Missionaries and traders record that where liquor rations were limited, the Iro-

quois would unite their several portions in a common stock, which they would then divide among a few of their number, thus enabling them to attain that complete intoxication which, in their view, was the true end of all drinking:⁷

. . . when they [tribes near Montreal, 1671-1699] have only enough brandy to induce drunkenness for only one, if four are present, three will not even take a taste. But one will be chosen to have the privilege of becoming inebriated. Many say that they cannot become intoxicated on a single glass of brandy, that there is only one degree of drunkenness worth while, the sort which they call "Gannoniouraratonseri," complete insobriety. And when they begin to feel the effects of the brandy they rejoice shouting, "Good, good, my head is reeling." Then they begin to chant their "Gannonhaoury," into which they put all the evil which comes to mind.⁸

The fact that the Iroquois were not "ashamed of so infamous a vice"⁹ but took "pride in getting drunk and in making others drunk"¹⁰ for "to be drunk is to be valiant"¹¹ apparently suffering no hangovers,¹² increased the opprobrium. The Jesuits didn't seek to impose total abstinence¹³ nor did the English,¹⁴ but "Drunkenness, dreams and Impurity"¹⁵ were major obstacles to conversion;¹⁶ moreover, the Jesuits were clearly shocked.

Abbé Belmont begins with the observation that insobriety in Europe, which is "looked upon there as a mark of good-fellowship, a source of pleasure and comfort which friends and convivial companions allow themselves," should not be confused with Indian drunkenness which is "quite a different species of vice than what it is

⁷ Parkman, 1901 : 373.

⁸ Belmont, 1952 : 47-8.

⁹ Thwaites, 1896-1901, 61 : 159.

¹⁰ *Ibid.*, 6 : 253.

¹¹ *Ibid.*, 51 : 129.

¹² It is uncertain whether this was a physiological reality, due perhaps to an absence of strong guilt feelings, or merely an expression of culturally-demanded stoicism.

¹³ Thwaites, 1896-1901, 61 : 57.

¹⁴ O'Callaghan, 1849-51, 1 : 227.

¹⁵ Thwaites, 1896-1901, 51 : 123.

¹⁶ *Ibid.*, 11 : 251 ; 22 : 239 ; 42 : 135, 147 ; 54 : 37, 101, 112.

⁵ James, 1902 : 387.

⁶ Parker, 1912

among other people . . . a peculiar kind of insanity." He writes:

The Indians among the Savages were quite a different species than the same would seem among Europeans. For the Savages, having found a beverage which could so quickly and effectively intoxicate them, did not, like themselves, abstain from themselves and give them thereby the ability and the bravado they desired, it was not long before drunkards could be seen killing one another, husbands burning their wives, women disgracing their husbands, fathers throwing their children into burning caldrons.¹⁷

He continues:

They saved brandy until they have collected enough to make themselves drunk. Then they take to drinking without eating. For eating would check the effects of the brandy. When they feel their heads beginning to swim, they stagger and start to chant their death song into which they pour all their imprecations against their enemies. Once intoxicated, they throw off their clothing, or let it drop, and running about the town naked beat one another. They bite each others' noses and ears so that there are scarcely any features remaining. They run about howling with knives in their hands, their delight in seeing their women and children lying before them as if they were masters of the World.¹⁸

He then proceeds to list, with details, atrocities committed by drunken natives.¹⁹ Two centuries later, the details still make frightening reading.

This was no exception. In 1642 Father Richard wrote that the Iroquois "did not buy our liquors on account of any pleasant taste . . . but simply to become intoxicated".²⁰ while Father Carheil in 1665 said he was certain that Cayuga "drink only to intoxicate themselves, they say so openly, and sing their intention to do so, before executing it, and that they are heard to shout, 'I am going to lose my head; I am going to drink of the water that takes one's wits away.'"²¹

Alcohol was used for the cultivation of dreams; to the ancient rite of dream recitation was added the drink-all party: "Gen-

erally all Iroquois drink to intoxication, to themselves," wrote Noyan, "It has become the basis of the religion!"²²

"All that they dream," wrote Father Bruyas in 1668, "must be carried out."²³ Since dream commands weren't personal wishes, but divine orders, individuals weren't held responsible for acts committed in obedience to them.²⁴ Abbé Belmont, in a hypothetical dialogue between priest and pagan has the Indian say, "Drunkenness excuses everything."²⁵ Literally scores of cases are described by missionaries and traders where Iroquois who committed serious crimes enjoyed impunity because they were intoxicated at the time.

The *Jesuit Relations* are full of accounts of dream recitations and obedience to dream commands, as well as to the Iroquois interpretation of the experience of intoxication as equivalent to the dream experience. It's tempting to quote such cases at length for they are rich in detail and variation. But my point is simply this: to the Iroquois, intoxication originally meant not flight, but search; not escape, but fulfillment; not loss of self, but discovery of self. To them it was a positive, spiritual experience.

In later centuries they drank themselves into a stupor, not for the purpose of seeking out a guardian spirit, but because they were depressed—it was, they thought, a way out of their miseries. I think it might even be related to a "will to death." Surely this has been the opinion of most observers.

Thus the primary role of alcohol in Iroquois life changed over the centuries: the emphasis shifted from alcohol as the dream-maker in the 17th century, to alcohol as a release of tension and aggression in the 18th, and then to alcohol as evil in the 19th century—defined by the Prophet Handsome Lake, as the work of the devil. But the earliest interpretation was never wholly superseded and it may even persist to a limited degree among some of the modern Iroquois.

¹⁷ Belmont, 1952: 45.

¹⁸ *Ibid.*, 49.

¹⁹ *Ibid.*, 52.

²⁰ *Ibid.*, 53-57.

²¹ Thwaites, 1896-1901, 22: 243.

²² *Ibid.*, 52: 193.

²³ Noyan, 1912: 75.

²⁴ Thwaites, 1886-1901, 51: 125.

²⁵ *Ibid.*, 22: 243; 46: 103; 51: 125; 54: 99-101; 61: 173; Charlevoix, 1923, 2: 31; Kinkietz, 1940: 344.

²⁶ Belmont, 1952: 63.

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A STATISTICAL STUDY OF FIRST ADMISSIONS WITH PSYCHONEUROSES IN NEW YORK STATE, 1949-1951¹

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In any one year a large number of patients are admitted to mental hospitals, but another group remains in the community. There is no general agreement as to the ratio of these two groups, though some estimates make them equal. Nevertheless, admissions to mental hospitals are so numerous that they have furnished the basis for most studies of the incidence and distribution of mental diseases. In the case of the psychoneuroses, however, the great majority remain in the community, and do not enter into any system of statistical reporting. Therefore, statistical studies of the frequency of the psychoneuroses are necessarily incomplete. Nevertheless, some useful information is available, if one considers hospitalized cases as representing the more severe and handicapping range of symptoms.

On this basis, we may consider the trend of first admissions with psychoneuroses to the New York civil State hospitals. These data are available since 1912. In recent years, such first admissions have averaged from 500 to 600 per year. In the early years, however, the totals were so small that it was necessary to average them over intervals of 3 years, in order to obtain significant results. Relative to all first admissions, there has been a significant increase in first admissions with psychoneuroses. The latter have grown from 1.5% of the total in 1914 to 4.3% in 1954.

The corresponding rates of first admissions per 100,000 population rose slowly between 1914 and 1930, then increased more rapidly to 3.6 in 1940. The rate dropped during World War II, but resumed the upward trend subsequently. Though it cannot be concluded from these data that there has been a relative increase in the psychoneuroses in New York State, it may be said

that such admissions to the State hospitals have increased, which is a fact of social importance in itself.

Who are first admissions with psychoneuroses? What are their characteristics, and from what elements of the general population do they come? Answers will be sought through a consideration of such first admissions to all hospitals for mental disease, public and private, in New York State, from October 1, 1948 to September 30, 1951. The middle of this period, April 1, 1950, was the date of the federal census of population, and this permits us to compute average annual rates of first admissions. The data refer primarily to white first admissions during this period.

There were 3,472 white first admissions with psychoneuroses. Of this total, 1,664, or 47.9%, were admitted to the civil State hospitals. An equal number were admitted to the licensed hospitals. This is in marked contrast to the relative distribution among all white first admissions during the same period. Of the latter, 78.9% were admitted to the civil State hospitals, and only 18.4% to the licensed hospitals. The difference resulted in large part from the higher economic status of psychoneurotics, which made private facilities more available to them. There is also a selective process, however, whereby the private hospitals are less likely to admit patients with psychoses associated with advanced age. But even first admissions with dementia praecox are underrepresented among admissions to the licensed hospitals, as they amounted to only 15.7% of the total of such admissions, compared with 47.9% for psychoneurotics.

LEGAL STATUS

Closely related to the question of the relative frequency of admissions with psychoneuroses to public and private mental hospitals is the type of admission procedure. Thus, of all white first admissions during 1949-1951, 61.1% were admitted by judicial certification. Only 19.4% made voluntary applications. Among the psychoneu-

¹ This investigation was supported by a research grant from the National Institute of Mental Health, of the National Institutes of Health, of the United States Public Health Service.

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otics, however, only 17.2% were certified judicially, whereas 67.1% were admitted on voluntary application. The difference is due primarily to the admission policies of private hospitals, whereby voluntary application is given preference over other forms of admission. It is also true, however, that psychoneurotics have, generally, a better understanding of the value of voluntary application.

AGE

There were 3,576 first admissions with psychoneuroses (both white and non-white) to all hospitals for mental disease in New York State during 1949-1951. Two-thirds of the admissions were aged between 20 and 44. The average age was 38.2 years. The average ages were 39.0 and 37.6 for males and females, respectively.

The average annual rate of first admissions was 8.0 per 100,000 population. The rate rose to a maximum of 16.1 at ages 30 to 34, and declined steadily at higher ages. Males and females had similar trends, the rates rising to maxima in early adulthood. Males reached their maximum rate about 5 years earlier than females. However, the rates were generally higher for females than for males at all ages. The average rates were 9.1 and 6.9 for females and males, respectively. The excess of the rates for females was relatively greater at ages under 40.

The several types of psychoneuroses varied in their age distributions at first admission. The oldest were those with hypochondriasis and those with reactive depressions. Among the whites, these groups had median ages of 48.3 and 39.9 years, respectively. The others were grouped closely with median ages varying from 32.2 among those with hysteria to 35.9 for the mixed category.

ENVIRONMENT

The average annual rate of first admissions with psychoneuroses during 1949-1951 was 8.3 per 100,000 white population. The urban population (defined as those living in incorporated places with a population of 2,500 or over) had a rate of 8.9. The remainder of the population, which was considered rural, had a rate of 6.3.

Unlike the experience with other groups of mental disorders(1), New York City had a lower rate than the other urban areas. Since the several areas and types of population differ with respect to admissions, it is necessary to use standardized rates. These also show that urban populations had higher rates than rural populations, and New York City had a lower rate than the remaining urban population. It is probable that New York City, with a concentration of private psychiatrists, sends a large proportion of psychoneurotics to such facilities, as a result of which they do not count as first admissions to mental hospitals. It is also known that New York City includes certain populations which recognize only to a limited degree the need for treatment of psychoneurotic conditions(2). How large a correction should be made for these factors in the rate for New York City is not known.

ECONOMIC STATUS

First admissions to hospitals for mental disease are classified with respect to economic status as follows(3):

Dependent—Lacking in the necessities of life or receiving aid from public funds or persons outside the immediate family.

Marginal—Living on earnings but accumulating little or nothing, being on the margin between self-support and dependency.

Comfortable—Having accumulated resources sufficient to maintain self and family for at least four months.

On the basis of such definitions, it has been found(4) that first admissions with mental disorders of organic origin include low percentages with comfortable economic status. Among first admissions with general paresis and alcoholic psychoses, the percentages were 11.1 and 10.1, respectively, during 1949-1951. Among arteriosclerotics and seniles they were 13.2 and 9.8, respectively. This increased to 18.7 among first admissions with dementia praecox. All were low, however, in comparison with the percentages for involutional psychoses (32.0) and manic-depressive psychoses (38.9). First admissions with psychoneuroses were comparable with the latter groups. A third

of the psychoneurotics were classified as in comfortable circumstances.

However, these statistics, though suggestive, do not give conclusive evidence of a relation between economic status and the frequency of mental disease. This requires, in addition, a similar classification of the general population, which, however, is not available.

Another approach may be made by a consideration of occupation, to which economic status is closely related. The census of 1950 classified the employed population by age and occupation. First admissions were classified similarly, but there is undoubtedly a degree of misclassification, since census enumerators and hospital staff did not always classify in the same manner. Furthermore, the tendency to hospitalize varies among psychoneurotics, so that we may expect a large proportion of the economically affluent to be treated privately. Nevertheless, males in professional categories had a high rate of first admissions with psychoneuroses, as did farmers and farm managers. White females of the professional class had a high rate, whereas operatives and domestics had relatively low rates.

Considering the degree of reliability of such data, it appears justifiable to conclude that, on the whole, they substantiate the belief that the psychoneuroses are relatively more prevalent among the higher economic classes.

EDUCATION

Previous investigations have shown that, in general, the rate of first admissions to hospitals for mental disease varies inversely with degree of education. An exception was found in the case of the manic-depressive psychoses, where those with the highest degrees of education also had the highest rate of first admissions(5). To the latter group we must now add the psychoneuroses.

The federal census of 1950 classified the general population by education, according to the highest grade completed. Because the highest grade was unascertained for a large percentage of first admissions, the latter were grouped into 4 classes: no education, elementary school, high school and college. The average annual rates of

first admissions for 1949-1951 were computed for those aged 25 years or over, because formal education may be regarded as completed by that age. The average annual rate increased steadily from 6.1 per 100,000 among those with no formal education to 16.8 among those with some degree of college education.

Since the relative frequency of the psychoneuroses varies with respect to age and sex, the rates were recomputed on the basis of a standard population, aged 25 years and over. Thus, for constant sex and age proportions, the average annual rate increased among both males and females from a minimum among those with no education to a maximum among those who had attended college.

It appears, then, that first admissions with psychoneuroses, like manic-depressive psychoses, come from a higher social level than other groups of first admissions. It is sometimes asserted that this is a statistical illusion, deriving from the possibility that members of a higher social class may receive a more favorable diagnosis. We do not have the data necessary for assessing the weight of this argument. It is doubtful, however, that such an interpretation can be applied to the large numbers who are admitted to the State hospitals.

MARITAL STATUS

As with other groups of mental disorders, there are significant differences in the rates of first admissions with psychoneuroses, when they are compared with respect to marital status. In general, the unmarried have a higher rate than the married. The highest rates as might be expected, occur among the separated and divorced. The rate for the widowed appears low, when compared with the single and married groups. This results from the different age distribution of the widowed population. When standardized, the rate for the widowed is higher than that for the married, and is on a par with that for the single.

It is probable that the psychoneuroses act selectively with respect to marriage. Severe disorders will reduce the probability of marriage. With advancing age, the unmarried (single) population is left with a higher proportion of the unstable. Conse-

quently, the relative excess of rates of first admissions among the single is greater at ages beyond 35. This progressive action by selection is limited, however, to males. Apparently, marriage is less of a selective factor among females, in accordance with principles which make the male the more active partner.

The high rates of first admissions among the separated and divorced are indicative of the emotional instability of large sections of these groups.

RACE

There were 3,576 first admissions with psychoneuroses, of whom 3,472, or 97.1%, were white. Of the remaining non-white group, 92 were Negroes. Because they constitute so large a part of the whole, the characteristics of the white first admissions differ only slightly from those for the entire group of first admissions with psychoneuroses. Thus, the average age of the white first admissions was 39.3 years for males, 37.8 for females, and 38.4 for both sexes. The average annual rates per 100,000 corresponding population were 7.1 for males, 9.6 for females, and 8.3 for both sexes.

The 92 Negro first admissions with psychoneuroses represented only 1.5% of total Negro first admissions, compared with 6.8% among whites. They were younger than whites, the average ages being 30.9 for Negroes and 38.4 for whites. The average annual rate was 3.3 per 100,000 Negroes, compared with 8.3 for whites. Whereas white females had higher rates than white males, Negro males had higher rates than Negro females. Differences in average rates between Negroes and whites cannot be attributed to differences in age or sex proportions of the corresponding populations, because, when standardized for age and sex, the average annual rates were 10.8 for whites and 3.7 for Negroes. Furthermore, when limited to New York City which included 81% of the Negro population of New York State, the standardized rates became 9.4 for whites and 3.2 for Negroes. It is clear, therefore, that the relative rate of first admissions with psychoneuroses was higher for whites than for Negroes. However, the question inevitably arises as to whether Negro psychoneurotics are hospitalized as readily as whites. This is not a

question of prejudice with respect to admission to hospitals, which does not occur in the New York State hospital system. There is a strong probability, however, that Negro psychoneurotics may carry on more easily in their own communities, and that tolerance for them is greater. If so, this would account in part for the lower rate of such first admissions among Negroes. Similar social factors, operating more intensively among Negro females may explain their lower rates of first admissions with psychoneuroses than Negro males.

Other than a classification of the population by color (*i.e.*, white, Negro), the federal census does not give any more detailed descriptions. Thus, though white first admissions to mental hospitals in New York State are described in broad ethnic terms, there is no corresponding classification of the general white population. This makes it impossible to compute rates of first admissions for some large groups in New York State, such as those of Irish or Italian origin.

Some differences are apparent, however. Thus, whereas 6.2% of all white first admissions during 1949-1951 were diagnosed as psychoneurotic, the corresponding percentage for Jews was 10.4. For Irish and Italians, the percentages were only 4.8 and 5.1, respectively.

For the white population of New York State, the average annual rate of first admissions with psychoneuroses was 8.3 per 100,000. The Jews were estimated conservatively to represent 15% of the white population of New York State in 1950(6). This implies a population of 2,080,000 Jews in 1950. There were 853 Jewish first admissions with psychoneuroses, which gave an average annual rate of 13.7 per 100,000. The rate for the remaining non-Jewish white population was 7.4 per 100,000. Consideration must be given to the fact that the vast majority of Jews in New York State live in New York City. There were 741 Jewish first admissions with psychoneuroses from New York City, which gave an estimated average annual rate of 11.8 per 100,000. There were 870 white non-Jewish first admissions, giving an estimated average annual rate of 5.8, only half that for Jews. This confirms the oft-repeated statement that Jews have

a higher incidence of psychoneuroses than non-Jews.

It has been suggested, however, that part of their excess results from a greater willingness by Jews to seek medical advice, and, in particular, to a more favorable attitude towards psychiatry and psychiatrists. A lesser frequency of statistical reporting of the psychoneuroses by other groups, such as Irish and Italian, is attributed in part to contrary attitudes(7). However, this does not alter the probability that Jews have a higher rate of psychoneuroses than non-Jews.

NATIVITY

Of the 3,472 white first admissions with psychoneuroses, 2,899, or 83.5%, were native-born and 573, or 16.5%, were foreign-born. The average age of the native-born was 37.0 years. Native white males and females had average ages of 37.8 and 36.5 years, respectively. The foreign-born were much older, males having an average age of 46.6 years, females an average of 44.9 years. The average for both sexes was 45.4.

Native whites had an average annual rate of 8.5 per 100,000 corresponding population. Foreign whites had a rate of 7.6. For each sex, the foreign-born had a lower rate. The rates were influenced, however, by the differential distribution of the two populations with respect to age. The native-born are relatively more numerous at the younger ages (i.e., under 40), where the specific age rates are high. The foreign-born are weighted at the older ages, where the rates are relatively low. When the rates were standardized with respect to age and sex, using the population of New York State on April 1, 1950, aged 15 years and over (in 5 years intervals) as standard, then the rates became 11.2 and 12.1 for native and foreign-born, respectively. A further correction may be made by limiting the comparison to New York City, since the foreign-born population is predominantly urban. On this basis, the standardized rates become 9.5 and 11.7 for native and foreign-born, respectively. This indicates a higher rate of first admissions with psychoneuroses among the foreign-born.

Unlike the psychoses, more cases of psychoneuroses are treated privately, and therefore do not enter into statistics of hos-

pital admissions. It is probable that this has a greater effect upon the statistics of the native than upon the foreign-born. Hence, to an unknown degree, the rate of first admissions with psychoneuroses is underrated among the native-born.

It may be noted that the standardized rates for New York City are less than those for the State as a whole. New York City has a heavy concentration of psychiatrists and of clinical facilities. This is generally supposed to increase the number of recognized cases of mental disorders, including psychoneuroses. Other things equal, we should have expected higher rates for New York City. As pointed out previously, certain population groups do not encourage the treatment of psychoneuroses. These groups are concentrated heavily in New York City, and hence tend to reduce the rate of such first admissions.

MIGRATION

It has been demonstrated that rates of mental disease, as measured by first admissions, are higher among migrants than among non-migrants(8). The census data for 1950 make it necessary to use place of birth as an index of migration. Thus, native whites, born in New York State and resident in New York State in 1950 may be considered as non-migrants; those born elsewhere in the United States but resident in New York State in 1950 may be regarded as migrants.

On this basis, the difference in average annual rates of first admissions with psychoneuroses between migrants and non-migrants in New York State during 1949-1951 is well marked. For males, the rates were 6.4 per 100,000 for non-migrants and 11.6 for migrants. The corresponding rates for females were 8.6 and 15.6, respectively. For both sexes combined, the rates were 7.4 and 13.7, respectively.

Since migrants are younger than non-migrants, the rates were recomputed on the basis of a standard population. On this basis, the corrected rates became 11.6 and 8.4 for migrant and non-migrant males, respectively; 15.5 and 10.7 for the corresponding female populations; and 13.7 and 9.7, for both sexes combined. Thus, the rates for migrants remained in substantial excess.

SUMMARY

Though they undoubtedly constitute one of the largest categories of mental disorders, the psychoneuroses represent a small proportion of hospitalized cases. It is common knowledge that many psychoneurotics, even without treatment, carry out their social obligations. Others are treated privately, and therefore do not enter into hospital statistics. But of the unknown total of psychoneurotics, some, because of the severity of symptoms, are hospitalized. The records of the New York State Department of Mental Hygiene show that first admissions with psychoneuroses to the civil State hospitals have grown to approximately 4% of the total first admissions, and represented a rate of 4.3 per 100,000 population in 1954. As an indication of their social status, it may be noted that almost half are admitted to the licensed hospitals, in contrast to only 20% of all first admissions.

First admissions with psychoneuroses were admitted to all mental hospitals in New York State at an average age of 38.2 years. The average annual rate was 8.0 per 100,000 population. The rate rose to a maximum of 16.1 at ages 30 to 34. At all ages, females, generally, had higher rates than males.

Urban populations had higher rates than the rural populations. It is significant, however, that New York City had a lower rate than the remaining urban population. This was due, in part, to several large aggregates of population in New York City, who do not encourage treatment for what they consider minor disorders.

In general, only a small percentage of first admissions are described as being in comfortable economic circumstances. A third of the psychoneurotics, however, fall in this category. The only other comparable groups are those with involutional psychoses and manic-depressive psychoses. Some support for this conclusion is found from rates of first admissions according to occupation. Groups high in the occupational scale appear to have high rates of first admissions with psychoneuroses.

The higher social status of psychoneurotics is also seen through a consideration

of degree of education. Thus, only 15% of all white first admissions, aged 25 years and over, had been to high school or college, whereas these degrees of education had been attained by two-thirds of the first admissions with psychoneuroses. In fact, 20% of the latter had been to college. The rate of first admissions among psychoneurotics was higher for those with some degree of high school or college education than for those with no education or only elementary education.

With respect to marital status, the highest rate of first admissions occurred among the divorced, followed by the separated. The lowest rate occurred among the married.

The rate for Negroes was approximately a third of that for whites, despite the fact that the total rate of first admissions for Negroes is greatly in excess. It is not known at present whether the lower rate for psychoneuroses represents a racial characteristic. It is probable, however, that hospitalization for psychoneuroses is less likely to occur among Negroes, because of the greater tolerance exercised by the Negro community in this respect.

Jews have a higher rate of first admissions with psychoneuroses than the remaining non-Jewish white population.

Native whites residing in New York State, but born in other states have a higher rate than native whites born in and residing in New York State. This is interpreted as showing that migrants have a higher rate than non-migrants.

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VALUE AND LIMITATIONS OF A PSYCHIATRIC DEPARTMENT IN A GENERAL HOSPITAL IN BOMBAY (INDIA)

N. S. VAHIA, M.D.¹

We have reviewed the work of the psychiatric department of our hospital which was established in 1947, to determine what has been accomplished.² The annual admissions did not increase materially until 1950, but since then the increase has been remarkable: from 212 in 1950 to 1,914 in 1955. Diagnostic classification (1950) is shown in Table 1.

The wide variety of cases indicates a remarkable desire on the part of the patients' family doctors to send them to a general hospital. Also, the value of such a variety of cases for teaching undergraduate and post graduate student is very evident. Admission of psychiatric cases in this hospital is limited because of the small number of beds allotted to us. "Reactive Psychosis" represents cases in which psychosis was precipitated by severe mental strain in the immediate past.

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² My thanks are due to the Superintendent, Thana, for giving necessary data from the mental hospital and to the Dean of the K. E. M. Hospital, Bombay, for allowing me to use the records of the hospital for this paper.

The duration of illness is shown in Table 2. This shows that although the need of such a department is well appreciated by the medical profession and the public, the need for early detection of psychiatric illness in order to get better therapeutic response is not well appreciated by them. Illness "since birth" represents some of the mentally retarded children.

Almost half the cases coming to the department have been referred by other departments of the hospital (Table 3) showing the realization amongst other specialities in medicine of the need of psychiatric evaluation in many of the cases coming to them.

Although the ratio of male to female patients in the outpatient service is about 2 to 4, the ratio for the psychiatric department is 5 to 3. Whether this higher incidence in females is due to inequality of the social status of women in our country is very hard to say. The number of children attending the department is less because they go to the child guidance clinic in our sister institution Bai Jerbai Wadia Children's Hospital.

TABLE I
TYPES OF CASES

Types	Number of Cases			
	1950	O.P.D.	Indoor	Mental Hos.
Schizophrenia	66	191	34	325
Manic-Depressive Psychosis	11	132	3	400
Paranoia	0	36	1	0
Post-partum Psychosis	6	31	1	0
Acute Psychotic State	15	63	0	3
Reactive Psychosis	0	38	2	0
Psychosomatic Illness	0	169	4	0
Anxiety State	8	67	3	0
Hysteria	15	158	22	0
Sex Disorders	20	297	0	0
Epilepsy	24	313	17	33
Mental Defect	11	127	2	36
Miscellaneous	61	292	4	239
Total	237	1914	93	1036

Treatment.—It was difficult to evaluate our therapeutic efficiency from our records because the cases that were given symptomatic treatment such as hypnotics could not be properly followed up. Those that were given drugs like Dexedrine, Largactil or Rauwolfia alkaloids also have not been carefully followed up because of lack of sufficient cooperation from patients. Only the cases that received "special" treatments have been comparatively well recorded. It must be stated that the results recorded here were those at the time the treatment was discontinued because in the absence of psychiatric social service, satisfactory follow-up of the patients was not possible. One outstanding item noted by us was the remarkably small number of cases receiving these special treatments, compared to the much larger number in need of them. This was mainly due to the shortage of staff and number of beds.

Psychosis.—On the whole, psychoses were treated with ECT, cardiozol convulsive treatment and insulin treatment. Analysis of insulin coma treatment results have not been included here as this paper is mainly based upon outpatient work. Insulin sub-coma treatment was given in the outpatient department not only for psychosis but also for other cases. The details of this work

have been published in a previous paper. The response to these treatments is shown in Tables 4, 5 and 6.

Psychoneurosis and Other Mal-Adjustments.—Patients with psychoneurosis, psychosomatic illness and other maladjustments were given superficial psychotherapy together with drugs like methedrine, pentothal and carbon dioxide, which would reduce the length of psychotherapy so that a greater number of patients could be taken. The results are presented in Table 7. The results have been further analysed according to the drugs used as an aid to the psychotherapy (See Tables 8, 9 and 10). We were impressed by the fact that our results were poor compared to those when we had a full time trained psychiatrist for this work previously.

COMMENTS

1. The data show that a psychiatric department in a general hospital is better placed than a mental hospital, not only for the treatment of patients with psychosis but for those with psychoneurosis, psychosomatic illness and other maladjustments who would not usually go to a mental hospital.

2. The medical men, at least in the bigger cities, in our country seem to be aware of the need of psychiatric help for patients

TABLE 2
DURATION OF ILLNESS (1954)

	No. of Cases	
	O.P.D.	Indoor
Up to 1 Month	291	34
1-6 Months	456	26
6 Months to 1 Year	365	7
1-3 Years	346	12
More than 3 Years	390	10
Illness since Birth	66	4
Total	1914	93

TABLE 3
CASES IN PSYCHIATRIC DEPARTMENT

New Cases	Cases referred from other departments	O.P.D. Cases Total	Indoor Cases
1271	643	1914	93

coming to them with psychological or somatic complaints. Amongst other specialties also, the need to study the psychiatric factors is gaining more recognition.

3. Although drugs like Largactil and Rauwolfia alkaloids to a certain extent have decreased the need for physical treatments

in psychosis, the demand remains great for these treatments. The discrepancy between the demand and our ability to keep pace with it was most marked in cases that needed psychotherapy. This had increased the burden on the psychiatric department particularly because by its very nature psy-

TABLE 4

ELECTRICAL CONVULSIVE TREATMENT

Duration of Illness	No. of Cases	Rec.	G. Imp.	Sl. Imp.	No Imp.	T.D.
Less than 6 months	17	15	8	7	4	13
6 months-1 year	16	3	7	1	1	4
1-3 years	4	0	0	1	1	3
More than 3 years	4	0	1	0	0	2
Total	41	18	16	9	6	22

TABLE 5

CARDIOZOLE TREATMENT

Duration of Illness	No. of Cases	Rec.	G. Imp.	Sl. Imp.	No Imp.	T.D.
Less than 6 months	28	8	3	3	0	14
6 months-1 year	7	0	1	2	0	4
1-3 years	2	0	0	0	1	1
More than 3 years	3	0	1	1	1	0
Total	40	8	5	6	2	19

TABLE 6

INSULIN SUBCOMA TREATMENT

Duration of Illness	No. of Cases	Rec.	G. Imp.	Sl. Imp.	No Imp.	T.D.
Less than 6 months	54	14	9	1	4	26
6 months-1 year	17	4	4	2	1	6
1-3 years	4	1	1	0	1	1
More than 3 years	10	2	2	3	2	1
Total	85	21	16	6	8	34

TABLE 7

SUPERFICIAL PSYCHOTHERAPY

Duration of Illness	No. of Cases	Rec.	G. Imp.	Sl. Imp.	No Imp.	T.D.
Less than 6 months	24	3	3	1	13	4
6 months-1 year	9	0	4	1	3	1
1-3 years	22	1	1	1	17	2
More than 3 years	15	0	0	1	11	3
Total	70	4	8	4	44	10

chotherapy is a time taking procedure and the personal attention that every patient requires is hard to provide in absence of sufficient staff.

Lately, we have been able to provide facilities for group therapy. We are studying its value but it is too early to present our impressions.

SUMMARY

1. Considering the stigma associated with mental hospitals, the psychiatric department of a general hospital is a much better place, not only for detection and treatment of early cases of psychosis, but also for various kinds of psychoneurosis.

2. As a much wider variety of cases of

psychiatric illnesses attended the psychiatric department of a general hospital it is a good place not only for diagnosis and treatment of these illnesses, but also for teaching purposes.

3. Importance of psychiatry as an integral part of general medicine is well recognized by general medical practitioners and also by specialists in other branches of medicine; at least in the larger cities in our country. What is probably not appreciated is the need for early recognition of these cases and for treatment in the early stages to obtain better results.

4. Limitations of this department were very conspicuous in this study. A greater

TABLE 8
PSYCHOTHERAPY WITH PENTOTHAL

Duration of Illness	No. of Cases	Rec.	G. Imp.	Sl. Imp.	No Imp.	T.D
Less than 6 months	14	1	3	1	6	3
6 months-1 year	4	0	2	0	1	1
1-3 years	8	1	0	0	5	2
More than 3 years	4	0	0	1	2	1
Total	30	2	5	2	14	7

TABLE 9
PSYCHOTHERAPY WITH METHEDRINE

Duration of Illness	No. of Cases	Rec.	G. Imp.	Sl. Imp.	No Imp.	T.D
Less than 6 months	2	2	0	0	0	0
6 months-1 year	2	0	1	0	1	0
1-3 years	5	0	1	1	3	0
More than 3 years	1	0	0	0	1	0
Total	10	2	2	1	5	0

TABLE 10
CARBON DIOXIDE TREATMENT

Duration of Illness	No. of Cases	Rec.	G. Imp.	Sl. Imp.	No Imp.	T.D
Less than 6 months	8	0	0	0	7	1
6 months-1 year	3	0	1	1	1	0
1-3 years	9	0	0	0	9	0
More than 3 years	10	0	0	0	8	2
Total	30	0	1	1	25	3

number of trained personnel and more beds are urgently needed for both treatment and teaching purposes.

5. In our country, the establishment of psychiatric departments in general hospitals with adequate staff and beds is urgently needed to serve the community more efficiently and to develop healthy attitudes towards mental illness.

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CLINICAL NOTES

CLINICAL EVALUATION OF TRIMEGLAMIDE IN ANXIETY

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The recent discoveries of drugs with considerable effect on symptoms of mental distress have stimulated the search for other drugs in this field. One such compound is a central nervous system depressant, Trimeglamide (3, 4, 5-trimethoxybenzoyl-glycine diethylamide). Preliminary studies indicated that this compound is unique in one aspect: practically all drugs which produce sleep in humans cause ataxia and flaccid excitement during induction in dogs and cats; however, Trimeglamide induced somnolence and sleep in these animals without such motor disturbances (1). It therefore appeared that this compound might be of value for humans as a sedative and hypnotic in the treatment of insomnia, tension and anxiety states.

A study of the effects of this drug was made in the following manner: Patients referred to the psychiatric outpatient department for evaluation or treatment were given a complete psychiatric examination. Laboratory and other studies were performed whenever indicated. Those patients who were likely to benefit from drug therapy through periodic outpatient visits were then referred to our drug clinic, based on certain criteria as outlined by Lowinger *et al.* (2). All these patients experienced overt anxiety as a major symptom. At their first drug clinic appointment some of them were selected at random for treatment with Trimeglamide. Others were placed on this medication who had not previously responded satisfactorily to other drugs in the same clinic.

Twenty-one patients who took Trimeglamide from 7 to 100 days are all included

in this study; the mean duration of treatment was 39 days. The age of the patients ranged from 20 to 62 years; 9 were male and 12 female. The diagnostic groups were: psychotic disorder, 4 (schizophrenic reaction, 2; involutional psychotic reaction, 1; manic-depressive reaction depressed type, 1); psychoneurotic disorders, 8; psychophysiologic disorder, 1; personality disorders, 8.

The patients received 500 to 1,500 mg. of Trimeglamide daily in divided doses. They were followed in our drug clinic by return appointments every 1 to 4 weeks. At each visit the physician determined the patient's degree of disturbance using 5 criteria: anxiety, sleep, depression, thought disturbance, and interpersonal relations. A scale from 1 (no disturbance) to 5 (very severe disturbance) was used. This made it possible to obtain a score by adding these ratings. In addition to this more objective evaluation, a note was made at each visit describing all symptoms, especially those suggesting toxicity, and the dosage adjusted according to the clinical response of the patient. The drug was discontinued when there was a lack of improvement after an adequate trial or when the patient refused to continue taking the medication.

The effectiveness of Trimeglamide in each patient was determined on the basis of the alleviation of symptoms. The ratings for disturbance on each of the 5 criteria (anxiety, sleep, etc.) were totaled at the end of the observation period. If these ratings were lower, this was considered as a slight or marked improvement; if it was the same or higher, it was interpreted as no improvement. In addition to these scores, the clinical notes were used in the evaluation of the patient's progress. The following results were obtained: complete relief, 0; marked improvement, 2; slight improvement, 2; no improvement, 17.

Symptoms or complaints referable to

¹ From the Lafayette Clinic and Wayne State University College of Medicine, Detroit, Michigan. This investigation is part of a project supported by Research Grant MY 2241, National Institute of Mental Health, Public Health Service. Riker Laboratories, Inc., Northridge, California, assisted this study and furnished the Trimeglamide (3, 4, 5-trimethoxybenzoyl-glycine-diethylamide), also identified as Riker 548.

There were always 10-15 persons, 100-150 chickens, 10-15 and 20-30 pigs, sometimes having had one pig, but continued on the day for a meal or 10 days. The modification in a second period was occasionally done to compensate the group at a "bad" season. The first appeared again at the next fall time. A third period comprised a "disaster" and a year for the first time after the continued drying the population had to close and had a substantial decrease. A fourth period after had been on the way for 4 months and on 1-10-1979 the weather became clear developed an early September and was beautiful for a period of 2 weeks. The illness was considered most likely to be caused by virus although there were some unusual features. The diagnosis of being influenza A virus was also confirmed.

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POTENTIATION AND FACILITATION OF INSULIN COMA THERAPY

J. B. HAYES, M.D., and ROBERT E. KENNEDY, M.D.

one of the most difficult problems in a well-balanced budget is the allocation of the available funds within the optimum limits of safety. There are several variables in the treatment program that have to be considered at all times: 1 The maximum amount of insulin that may be given to the patient. 2 The production of ketone bodies in some reactions with more than the maximum amount of insulin allowed. It was felt that the production of some ketones in a minimal amount of insulin would increase the inherent risk of IHD, and a study was begun in 1958, now reported, in an attempt to solve this

For the purpose of this study, Teflon has been used extensively in this institution since its introduction into the psychiatric field several years ago, and has appeared to have a

potentiating effect when used with other therapies. During the past year, all the female patients receiving IST obtained satisfactory reactions on a minimal amount of insulin but many of the male patients on the same treatment showed no effect even when receiving our maximum amount of 900 units of regular insulin daily. It was found on closer observation, that the female patients also received perphenazine in conjunction with their daily insulin dosage and that this was not true in the cases of most of the male patients. As a result of this observation, all of the patients on IST after this time (1958) were placed on perphenazine, usually in the amount of 4 mgs. q.i.d. for the female patients, and 8 mgs. q.i.d. for the males. We noted an immediate response to this combined treatment, and were able to produce the desired coma level in all patients, using as little as 25 to 35 units of regular insulin on each daily dose. Coma levels were classified as described by Kalinowsky (1). A further test of this hypothesis was made when a second course of insulin therapy was given to a male patient who previously had shown

[illegible][illegible]

no response, failing even to after 3 months of daily treatment with 100 mg. of insulin. During the second stage of treatments, this patient also received 8 mg. of perphenazine q.i.d., and the dosage was always under 300 mg. He has just completed a course, with no reactions, with marked improve-

ment. As a further aid in IST, we have now begun the use of Glucagon² (2) using 0.5 mg. intramuscularly to the patient 10 to 15 minutes before we wish the treatment terminated. This drug is given at the second stage of coma reaction, and in most cases, the patients awake in from 10 to 15 minutes, and are alert and able to take care of themselves and drink orange juice. It was found, however, that if the patient had gone past early second stage of coma, the drug was ineffective, and then he must be given an intravenous injection of sugar solution.

The problem appears to have been solved by the use of perphenazine in conjunction with insulin. The coma reactions reached in the usual amount of time (2½ to 3 hours), but then there ap-

peared to be a plateau in the reaction, and the usual dosage of insulin was not enough to break through this plateau. It was found that if the patient was given a further 10 mg. of perphenazine in a matter of a few minutes, this had a powerful effect and the first observation on the next of the treatment was to find the reaction at the second stage of exactly the same intensity of an injection of sugar.

In summary, it is felt that the glucose combination of doses in conjunction with insulin produces a fast reaction even in insulin-resistant patients, which is apparently as safe as the use of insulin alone, but with the advantages of increasing the number of patients who can benefit from this treatment, without raising the risk of the procedure or increasing the number of hospital personnel required for the treatment program.

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CLINICAL RESULTS WITH THE USE OF DEANOL (DEANER®) IN SCHIZOPHRENIA

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Deanol (2-dimethylaminoethanol) is an important psychochemical compound. It is thought to be a precursor of acetylcholine (1), will partially substitute for choline (2), and is a complete substitute as a growth factor in growing chicks (3). It has been shown to slightly depress the hippocampus (4), to depress reticular stimulation (5), to block the interaction response between reticular formation and hippocampus (6). The potentials of reticular formation are increased and barbiturate induced depression of the reticular formations is overcome (6), and the resistance of the heart to pentobarbital is doubled by deanol (7).

We began our study with 30 institutional-

ized patients in April, 1957. The dosage range was 5 mg. to 25 mg. twice daily, and the drug was not given after 3 p.m., so as not to interfere with sleep. Shortly thereafter, the number of patients was increased to 100, all institutionalized females, with age range 26 to 82 years. All were schizophrenics, exhibiting apathy, retardation and depression. Many were mute and inaccessible. The dosage of deanol ranged between 25 mg. and 400 mg. daily, the period of therapy was from 2 to 9 months. Some patients were markedly lethargic from use of reserpine, chlorpromazine, trifluopromazine and perphenazine; in these patients deanol was used to combat the lethargy.

The medication was given orally, in-

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intramuscularly, or intravenously, parenteral therapy being utilized when the patients refused oral therapy. We tried intravenous therapy merely as a test to determine the time required for effect. Since deanol is essentially replacement therapy, rapid onset of action is not a necessary requirement. Other analeptic drugs, such as methylphenidylacetate hydrochloride, d-lysergic diethylamide, *etc.*, are more effective when administered intramuscularly, but, for most patients, sustained action is desirable, and can be obtained by oral administration of any efficient analeptic drug(8).

The criteria for improvement were increased interest in surroundings, and work capacity; decreased mutism; improvement in retardation and depression, and improvement in personal care. There was significant improvement in 20 of the 100 patients. A decrease in somatic delusional trends was also noted. Lethargy and somnolence due to reserpine, trifluopromazine, perphenazine and Dartal were relieved in 25 of the 100 patients.

There was no significant difference in the reactions of 10 nonpsychotic as compared to psychotic patients. When indifferent response was noted with daily dosage up to 200 mg., increasing the dose up to 400 mg. daily did not improve the response significantly. This was true equally for psychotic and non-psychotic patients.

There was no loss of weight in any of the patients. Side actions seen in 5 patients, consisted of jerky movements of the extremities and head, staring, restlessness, and insomnia. The blood pressure of one patient changed from 120/80 to 140/50; this patient had taken 10 mg. t.i.d. for 5 days, and the Deaner was discontinued because of hypertonia of the neck musculature.

Anorexia was not noted: instead, appetite was increased in 33 patients.

The purely analeptic effect of methylphenidylacetate hydrochloride, iproniazid and pipradol is more marked than that of deanol.

SUMMARY

Deanol was used in 100 institutionalized female schizophrenics. It was moderately effective in 25%, producing increased interest in milieu, work and recreation, and decreasing somatic delusional trends, depression, retardation, and mutism. Side actions were minimal, and all were controlled by dosage regulation.

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A NEW SCREENING TEST FOR BROMIDE INTOXICATION

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The admission to Northern State Hospital within a single month of 2 patients subsequently diagnosed as acute brain syndrome, bromide intoxication, made ap-

parent the need for a simple screening test for bromism. On admission both patients were totally disorganized and so seriously ill that transfer to the medical service was mandatory. The diagnosis not immediately apparent in the first patient, was only suspected when symptoms of toxicity claimed

¹ Respectively, Director of Research, and Chief of Medicine, Northern State Hosp., Sedro Woolley, Wash

the physician's attention. The initial serum bromide levels were 412 mg.% and 385 mg.% respectively. On appropriate treatment, both patients completely recovered.

The routine determination of serum bromide levels would insure proper diagnosis. However, they would impose needless demand on the limited laboratory service available in most state hospitals.

Urine was selected as the medium for testing: 1. Bromides are principally excreted by this pathway; 2. The established admission urine could be utilized. Initially, a urine bromide screening test using gold chloride, the reagent in the serum bromide test, was evaluated. This was discarded when a considerable number of false positive reactions were obtained, principally from phenothiazine drugs. Subsequently, a simple, accurate screening test was developed that involves the conversion of the bromide ion to free bromine. The free bromine is then extracted and concentrated by either Toluene or chloroform. These extracting agents, being nonmiscible with water, form a definite layer in urine. The presence of bromine and hence bromide is determined by an orange to reddish color in the extractant. To date, after extensive testing with this reagent of urines of patients on a wide spectrum of medications, no false positive reaction has been observed. Iodides will react but when extracted, a definite violet rather than the orange color is obtained. It was noted that this reagent is almost as sensitive as that employed in the Thorazine Test(1) for the detection of Thorazine and Sparine in urine, and similar colors are obtained. No confusion exists, however, when Thorazine and bromide are together in urine as the converted bromine is extracted and concentrated in the usual fashion.

The specific reagent used is acidified potassium bromate, which, in the presence of bromide, yields free bromine. Chemically, the reaction is: $\text{KBrO}_3 + 3\text{H}_2\text{SO}_4 + 5\text{KBr} \rightarrow 3\text{Br}_2 + 3\text{H}_2\text{O} + 3\text{K}_2\text{SO}_4$. The method of performing the test with the most useful proportions to employ is:

1. Add .5 cc. of a 2:1 mixture of 20% H_2SO_4 and a saturated solution of KBrO_3 to 3 cc. of urine.

2. Stopper the tube, invert to mix, and allow to stand for 3 minutes.

3. Add $\frac{1}{2}$ cc. of either chloroform or Toluene; restopper the tube; shake; and allow to stand until separation takes place. The separation is usually complete in 2 minutes.

4. A positive test for the presence of bromides is the appearance of an orange to red color in the extractant.

To determine the sensitivity of this urine test, bromides were administered to several patients. Serum levels up to 200 mg.% were obtained. Medication was stopped and bi-weekly serum bromide levels were determined and correlated with daily qualitative urines. The bromide serum level of Patient "A" declined from 195 mg.% to 115 mg.% in 7 days and daily urinary bromides were distinctly positive down through a serum level of 80 mg.%. Although it has been cited that urine concentration parallels that of serum(2), in our hands, urine bromide levels run about one-half that of serum levels. This urine test is sensitive to at least 40 mg.% of bromide in urine, and this end point is further confirmed by serial solutions of bromides.

Theoretically and actually, the sensitivity of the test could be and is improved by using larger amounts of urine. The 3 cc. amount has been selected as certain to detect the presence of bromides in the toxic range. Subsequent to the development of this test, it was brought to our attention that a urine bromide test has been described in the literature for many years, utilizing fuming nitric acid. We found this test, as described, to be completely insensitive to bromide.

The commitment to state hospitals of patients with psychoses due to bromide intoxications remains a present day occurrence. The value of early diagnosis would be the frequent possibility of treatment in the general hospital and the avoidance of needless commitment. We would like to suggest that the urine screening test for bromides described herein would be of assistance in the diagnosis of cases where Bromism is a possibility. It is further suggested that this test could be easily incorporated into the admission urinalysis

in state hospitals in order to determine present incidence and to provide for early treatment.

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PROMAZINE AND COMBINED PROMAZINE-MEPROBAMATE TREATMENT OF HOSPITALIZED PSYCHOTIC PATIENTS

GEORGE VLAVIANOS, M.D., AND LUDWIG FINK, M.D.¹

After a 13 month preliminary trial of promazine² in 200 hospitalized mental patients,^{1, 2} a supplementary study,³ which extended the total treatment period to 29 months, was initiated in an additional 100 chronically and severely psychotic men. The diagnoses included: 1. schizophrenia, 2. alcoholic psychosis, 3. psychoneurosis, 4. psychopathic personality, 5. The patients' ages ranged from 24 to 73 years; the duration of illness, 3 to 25 years. In the last 12 months of the study, 69 of the 100 patients were treated with promazine and meprobamate⁴ in combination. All of the 100 had received ataractic compounds for 5 to 18 months, 17 simultaneously with electroshock, 3 with insulin coma and 1 with insulin coma combined with EST.

In refractory cases, promazine was administered in larger than the previously used dosages. Nine extremely noisy, unmanageable, acutely hallucinating patients received maximum doses of 4.5 gm. for 14 to 42 days, and were maintained with 600 to 900 mg. daily. For selected cases in which restlessness, motor hyperactivity, and agitation with depression were predominant, promazine was used in combination with meprobamate. The optimum response usually was obtained with 900 mg. to 1.5 gm. promazine and 1.2 gm. meprobamate daily. For maintenance, daily doses of 600 mg. promazine and 800 mg. meprobamate

generally sufficed. For the catatonic and negativistic, a "break-through" trial was conducted with promazine alone. If there was no response, EST was administered, after which medication with promazine was resumed.

Psychomotor excitement and destructiveness generally were controlled with the higher doses of promazine. In selected chronic cases joint administration of lower doses of promazine with meprobamate, individually adjusted, produced the same effect as higher doses of promazine used alone, and aided liberalization of the ward program. Need of EST and coma therapy was reduced, and indications for lobotomy minimized. Eighty-three (nearly 28%) of the overall total of 300 have been released. Of these 17 (20%) have returned; alcoholism necessitated readmission in 10. The mental disorder was not intensified by the medication, nor were there any signs of habituation.

Drowsiness and dysarthria developed in 2 of the 9 who received high doses of promazine, but subsided in a maximum of 15 days after reduction of the dose. Grand mal seizures occurred in 3, who had received daily doses of 900 mg., 2.4 and 3 gm. promazine respectively. Discontinuance for 10 days and resumption at 300 mg. per day induced no further seizures in 2. In the third patient one additional seizure occurred after 13 days. Phenobarbital, 1½ grains twice daily, was added to the regimen for 2 months after which promazine alone, in daily doses of 300 mg., has produced no recurrence in the ensuing 8 months. Monthly routine laboratory studies demonstrated high alkaline phosphatase levels in 3 patients who received daily

¹ Kings Park State Hospital, Kings Park, N. Y.

² Promazine Hydrochloride is available as Sparine H Hydrochloride from Wyeth Laboratories.

³ We gratefully acknowledge the cooperation of Charles Buckman, M.D., Director, J. Rothery Haight, M.D., Assistant Director, and Reuben Cares, M.D., Director of Clinical Laboratories.

⁴ Meprobamate is available as Equanil from Wyeth Laboratories.

of 600 to 900 mg. promazine alone. The findings became normal after reduction of the dose to 300 mg. daily. In addition, clinical improvement permitted continuance of treatment.

Orthostatic dizziness or fainting occurred in 3 who received promazine alone, and in 4 who received both compounds, but did not contraindicate medication. A mild rash and itching developed in 12 of the 69 (17%) who received the

combination, had no relation to dosage or duration of treatment, and subsided on discontinuance. This was considered an expression of individual sensitivity, probably to meprobamate.

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DRUG USE-RATE IN A STATE HOSPITAL

J. R. WHITTIER, C. D. KORENYI, O. DIAMOND, P. J. TOMLINSON, AND
H. A. LABURT¹

In 1954 the medications chlorpromazine and reserpine were made available to hospitals for the mentally ill in the United States. Additional drugs have appeared since then, and their overall effectiveness has considerably modified psychiatric treatment.

Whether a drug once introduced continues to be prescribed might be determined by the ratio of therapeutic effectiveness to the incidence of undesirable side effect, provided the elements of this ratio were defined. Additional determining factors include at least 1. The drug's availability from the hospital pharmacy, 2. Pressure by pharmaceutical representatives to initiate and continue use, 3. The kind and volume of information available concerning new drugs, 4. Attitudes to drug therapy of physicians responsible for patients, and 5. The policy of the hospital administration to drug use.

This article provides graphic records of the use-rates of tranquilizing and stimulant drugs in a large state hospital.

MATERIAL AND METHODS

In the New York State Department of Mental Hygiene a special form was revised in February 1955 (Form 41-DMH) to permit reporting of total patients receiving chlorpromazine and reserpine, and male and female sub-totals. These reports were added to those previously submitted de-

scribing use-rates of convulsive and insulin therapy.

In January 1957 this form was again revised to include additional tranquilizing drugs, other special therapies, special somatic therapy of the aged, and psychotherapy.

The hospital report is consolidated monthly from reports of the physicians responsible for the wards. The reports of special therapies were available for the 4 year period from January 1954 to December 1958 inclusive. Data from each of 9 tranquilizing drugs or combinations and 3 stimulant drugs were plotted graphically (Figure 1). Only drugs reported as being prescribed to 10 or more patients were included in the study. Hormones, vitamins, and drugs in experimental status were not included. At the end of 1958, the total hospital population was 6,325 (2,621 males and 3,704 females).

RESULTS

It will be noted that a use-rate listing of drugs by descending order is: 1. Chlorpromazine, 2. Promazine ("Sparine" Wyeth), 3. Reserpine, 4. Prochlorperazine ("Compazine" SKF), 5. Meprobamate ("Equanil" Wyeth—"Miltown" Wallace), 6. Triflupromazine ("Vesprin" Squibb), 7. Mepazine ("Pacatal" Warner-Chilcott). Chlorpromazine demonstrates by far the greatest use-rate, approximately 4 times that of its nearest competitor, promazine.

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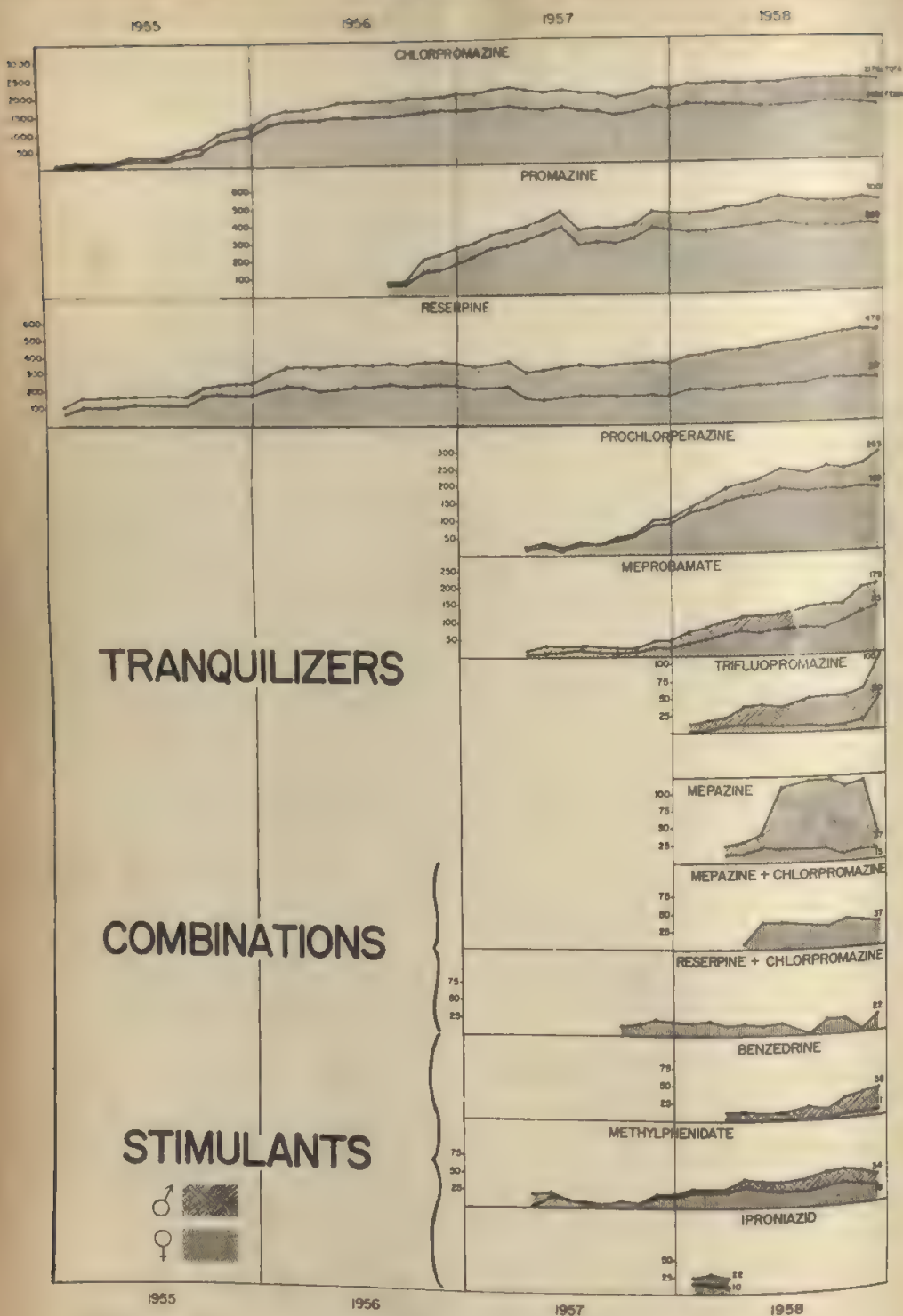


FIGURE 1
NUMBER OF PATIENTS RECEIVING EACH DRUG MONTHLY (ORDINATE) DURING THE FOUR YEAR PERIOD STUDIED (ABSCISSA). NOTE THAT ORDINATES DIFFER.

Drugs manifesting continuing steady growth in use-rate are as follows, in rank order: reserpine, prochlorperazine, meprobamate, triflupromazine, benzedrine. Drugs presently stabilized in use-rate after steady growth are as follows, in rank order: chlorpromazine, promazine. Drugs manifesting growth and decline are: methylphenidate, mepazine (male service).

The fluctuation in use of mepazine on the male service was apparently related to the introduction of triflupromazine, which competed effectively for use on the available population of this service.

Notable use-rate phenomena include the rapid rise for triflupromazine, the relatively large numbers of females receiving prochlorperazine, and the passage of reserpine by promazine in May of 1957. The brief appearance of iproniazid was determined by a departmental decision temporarily to suspend use until toxicity was better defined.

A tendency for use-rate by sex to follow hospital population sex distribution is apparent. Use-rate total for female patients exceeds that for male patients for all drugs except reserpine, triflupromazine, mepazine and benzedrine.

Finally, there is an increasing trend to the use of new drugs for more patients, manifested by the irregular increase in the

initiating of new drugs on the services: 2 in 1955, 1 in 1956 and 4 each in the years 1957 and 1958. Combinations of 2 or more drugs began to appear in 1958 (2 instances). By the end of the observation period, 61% of the total hospital population, (21% of the male, and 40% of the female populations) were receiving one or more of the drugs. Of the total, male, and female patients on drugs, 34%, 11%, and 23% respectively were receiving chlorpromazine.

SUMMARY

Use-rates for 9 tranquilizing and 3 stimulant drugs or drug-combinations were recorded in a state hospital population over a 4 year period, ending December 31, 1958. Data were plotted graphically, and use-rates were observed in descending order for chlorpromazine, promazine, reserpine, prochlorpromazine, meprobamate, triflupromazine, mepazine, mepazine plus chlorpromazine, reserpine plus chlorpromazine, benzedrine, methylphenidate, and iproniazid.

By the end of the observation period, 61% of the total hospital population, (21% of the male, and 40% of the female populations) were receiving one or more of the drugs. Of the total, male, and female populations on drugs, 34%, 11%, and 23% respectively were receiving chlorpromazine.

ADMINISTRATIVE NOTES

MENTALLY DISTURBED CHILDREN ON WARDS WITH ADULT MENTAL PATIENTS

OTT B. McATEE, M.D., AND GEORGE A. ZIRKLE, Ph.D.¹

Hospital administrators and the public in general have been led to feel that it would be like putting a "lamb in a lion's cage" to admit a mentally ill child to an adult ward of mental patients. Is this stereotyped view correct? It is the contention of the authors that it is not. Furthermore, just the opposite may be true. This is not an idle opinion, but derives from a detailed research investigation of two children who were patients at this Hospital. One was a 12-year-old boy and the other an 11-year-old girl. After an initial period of hesitation, these children adjusted rapidly to the adults on their ward. Their recovery was not hampered by the adults, nor were they abused. Instead, they became the objects of much "tender, loving care." Some adults even vied with each other to do things for them. This was especially true of those who had children of their own. Most of these quickly assumed the "father" or "mother" role. And surely this should not be surprising; for the common human situation is for the different ages to live together in families.

A 3-fold plan was used in evaluating the success of the "family" situation on the ward. First, the number of social contacts of each child with others on the ward were counted over a 2-day period. The same was done for 2 adult patients in each ward who were matched with the children as closely as possible, except for age. Results showed decidedly more child-adult contacts than adult-adult contacts. The same was found to be true when the children were placed on visiting wards for a day. Secondly, a sociometric nominating procedure revealed the children to be among the most popular on their wards.

The third procedure was to poll the opinions of nurses and attendants on the

wards in question. Some disapproved the arrangement at the start, and continued to do so. They noted that the children made some patients nervous, and others homesick for their own children. They predicted the children would be spoiled by so much attention. However, other nurses and attendants changed from skepticism to acceptance, and in some cases to enthusiasm over the therapeutic possibilities of the family ward situation for adults and children alike. They remarked on the warm social relationships stimulated by the children. And they expressed approval for the decline in egocentric preoccupation in some patients who cooperated with each other to do things for the children. The ward routine was not disrupted, but was made more lively by the presence of the children. No sex interest in the children was noted, but general interest in their activities and loving care for them was frequently observed. Male patients tended to abstain from using profanity or smutty talk before the boy.

There is no wish to imply that children and adults should be mixed together indiscriminately. Age segregation will no doubt continue to be needed for most mental patients. The view that it must be maintained for *all*, however, was not supported by these findings. Stereotyped fears at this point need to be discarded. In the light of the research results, it is the authors' opinion that an occasional child placed on an adult ward will find there a suitable treatment environment and, moreover, that the presence of the child will enhance the therapeutic milieu of the adults. In other words, it is contended that the family or mixed-age ward constitutes a distinctive form of treatment, and that it deserves a serious place along with other environmental treatment measures in hospital management. For carefully selected children and adults it has real value.

¹ Respectively, Chief Medical Director and Superintendent, and Consulting Psychologist, Madison State Hosp., Madison, Ind.

COMMENT

PERSONALITY AND PERFORMANCE

ELI GINZBERG¹

After eight years of research, during which it had the full cooperation of the Army and the Veterans Administration, the Conservation of Human Resources Project has recently published *The Ineffective Soldier: Lessons for Management and the Nation* in three volumes entitled "The Lost Division," "Breakdown and Recovery," and "Patterns of Performance" (Columbia University Press, \$6.00 each).

At an early stage of the investigation the Conservation staff was fortunate to elicit the cooperation of 35 psychiatrists who had held senior positions in the Armed Services during World War II. An analysis of their communications was published in 1953 under the title *Psychiatry and Military Manpower Policy: A Reappraisal of the Experience in World War II*, and many of the leads which they provided were most helpful.

Even if one selects only those findings that are likely to be of greatest interest to psychiatrists, it is not easy to summarize about 900 pages of text, with 150 key tables which present data almost all of which have never been published before. The most useful procedure will be to set out the broader theoretical findings and to weave a minimum number of facts around them.

Perhaps one of the most important findings of the entire investigation is the widespread effort to predict performance solely, or even primarily, in terms of "emotional stability." The ability of a man to get a job, to marry and support his dependents and to stay out of trouble with the law—minimum criteria for socially acceptable performance—depend primarily on his physical and intellectual capacities and his motivation. While emotional factors are important for understanding how a man feels, they are likely to keep him from

performing acceptably only if the disturbance is a serious one.

The proper study of performance must go beyond the individual and include a consideration of how the policies of the organization for which he works and the pressures and supports in the larger environment affect his performance. In *Breakdown and Recovery* the Conservation staff presents about 80 detailed case histories selected specifically to illuminate the multiple factors in performance—individual, managerial, environmental.

The foregoing helps to explain why it was that although 1.75 million men were rejected for mental or emotional reasons in World War II, another 750,000 had to be prematurely separated for the same causes. Aside from serious limitations in screening procedures the basic theory of psychiatric selection was faulty. Only about 170,000—or approximately 1 in every 5 men who was prematurely separated—had clear indications in their records of ineffectiveness, which, had they been noted, would have led to their being rejected at induction. Better screening would have identified more potential failures, but the important point to stress is that for the country as a whole, higher rejection rates were found *not* to be associated with lower separation rates. With 1 out of every 7 young men in the country being rejected or prematurely separated, raising the screening criteria would have been no solution. If that had been done, the Armed Forces would not have been able to meet their manpower requirements.

The single most useful criterion for assessing a man's potential performance is his educational background. Those with only a few years of grade school had an ineffectiveness rate in the Army four times greater than the high school or college men. A surprising finding was that men who had been divorced at the time of their induction and those who had re-

¹ Director, Conservation of Human Resources Project, Columbia University, New York 27, N. Y.

remained single during the decade after their separation had a five times greater rate of ineffectiveness in their life performance patterns than did those who had married and stayed married. Apparently, marital difficulties frequently reflect fundamental personality difficulties that affect all aspects of a person's performance.

Another interesting and important finding that warns against the indiscriminate use of clinical categories for the purpose of predicting performance is the record of soldiers who suffered from a psychosis. We were impressed to find many men who were unquestionably psychotic who managed for considerable periods to perform satisfactorily. Moreover, approximately half of all the men discharged for psychosis readjusted after the war.

The record of the entire group of half a million soldiers who were discharged for ineffectiveness showed that approximately 7 out of 10 were able to make a satisfactory readjustment to civilian life, some quickly, some more slowly. While we were able to identify many different factors as contributing to the successful readjustments of these veterans—discharge from the Army, family supports, disability compensation, medical care—by far the most important appeared to be the high level of employment. The ability of a man to shift around until he found a job to his liking and the willingness of employers to make adjustments to meet his special needs, particularly during his first months at work, proved a boon. A job means purpose, companionship, sense of accomplishment, income, status, and the ability to discharge one's obligations. A job is the precondition for adjustment; unemployment is the greatest individual and social scourge.

In *Patterns of Performance* the staff had an opportunity to evaluate a man's performance over several decades—before, during, and after military service. This approach helped to illuminate the extent to which men's performance tends to be more or less stable over longer periods and further to identify the strategic factors responsible for stability or fluctuation in their life performance patterns. Somewhat over half of the entire group show an

"adjusted" life performance pattern. About 20% had a "vulnerable" pattern—they performed satisfactorily in civilian life but could not meet the demands of the Army. About 10% had a broken pattern—satisfactory performance record up to breakdown in the Army but no recovery. The remainder, about 17%, had a consistently poor record—before, during, and after military service.

The investigation helps to correct some widespread misconceptions. For instance, only 1 out of every 5 men who became ineffective ever saw combat; only 2 out of every 5 ever got overseas. Even more surprising is the finding that the wounded veteran who was discharged for psychiatric reasons had the highest recovery rate, doubtlessly reflecting better selection for combat units. While Negroes generally had an ineffectiveness rate twice that of whites, no significant difference is found when they are matched with whites as to education. In every regard the farm group showed up more poorly than the urban group: it had higher rates of rejection, higher breakdown rates in the Army, and lower recovery rates after the war. Once again, the explanation must be found primarily in differences in developmental opportunities, particularly educational opportunities.

No support could be found for the belief that liberal disability compensation impedes recovery. In general, the wide range of benefits made available by the Veterans Administration was judiciously administered and definitely helped to speed the recovery of many veterans.

The subtitle of the over-all study—"Lessons for Management and the Nation"—suggests the basic concern of the Conservation staff with questions of policy. For better or worse, psychiatrists became very deeply involved during World War II in policy considerations affecting the whole gamut of military personnel practices and procedures. Increasingly, their concerns continue to take them outside the mental hospital and their offices. As their focus shifts from the individual patient to large groups, it is hoped that the three volumes on *The Ineffective Soldier* can help them to broaden their understanding of the

complex nature of performance. For in working with him, it says the psychiatrist, we need to bring our approach beyond the domain of psychodynamics to take account of the ways in which the actions of management and the forces in the larger environment contribute to or detract from effective performance.

HABIT

Habit is thus the enormous fly-wheel of society, its most precious conservative agent. It alone is what keeps us all within the bounds of ordinance. . . . It alone prevents the hardest and most repulsive walks of life from being deserted by those brought up to tread therein. It keeps the fisherman and the deck-hand at sea through the winter, it holds the miner in his darkness, and nails the countryman to his log-cabin and his lonely farm through all the months of snow. . . . It dooms us all to fight out the battle of life upon the lines of our nurture or our early choice, and to make the best of a pursuit that disagrees, because there is no other for which we are fitted, and it is too late to begin again. It keeps the different social strata from mixing. . . . It is well for the world that in most of us, by the age of thirty, the character has set like plaster, and will never soften again.

—WILLIAM JAMES

CORRESPONDENCE

CONCERNING THE ORIGIN OF THE TERMS GROUP THERAPY AND GROUP PSYCHOTHERAPY

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: In a review of Corsini's *Methods of Group Psychotherapy*, in the March 1959 issue of this Journal, p. 840, Mr. Illing says: "Moreno claims for himself the first coining of the term 'group psychotherapy' (1932), without, however, substantiating his claim, although he cites many 'witnesses' for his testimony, such as William Alanson White, Wierzbicki, Overholser, Pierre Renouvier, S. H. Boulkes."

Here follows the record in my own publications: *Application of the Group Method to Classification*, Congressional Library, No. 42-26884, Publisher: National Committee on Prisons, New York, 1931-32, a chapter "Concerning Group Therapy," p. 60-61; "Illustration of Group Therapeutics," p. 74-76; "Group Therapy in an Institution of the Insane," p. 77-79, "Definition of Group Therapy," p. 103.

The *Group Method* monograph was the topic of a Round Table at the annual meeting of the APA, May 31, 1932, Moderator: William A. White. At this meeting the term "group psychotherapy" was first given currency by the author.

The term "group psychotherapy" is recorded in my book *Who Shall Survive?* with a Foreword by Wm. White, Nervous and Mental Disease Publishing Co., Washington, D. C., First edition, 1934, Congression-

al Library No. 34-18502; see p. 437, 429, referring to chapter "Group Psychotherapy," and the definition, p. 301, "Group therapy treats not only the individual who is the focus of attention because of maladjustment, but the whole group of individuals who are interrelated."

Group psychotherapy owed its emergence to sociometry and small group dynamics which was expounded by the author between 1931 and 34; he formulated group therapy as a scientific methodology with the help of Drs. White, Whitin, Branham and Jennings. There have been forerunners of pre-scientific group methods in the U. S. A. and Europe before 1931. The most important influence came from Vienna since 1909. Many of these methods (psychodrama, 1911, interaction methods, 1913, psychodrama combined with group therapy, 1923) have been launched by this author and described in his German books.

It is farfetched to trace the origins of group psychotherapy to European sociologists. One could equally quote American sociologists. Every new idea has forerunners but the moment of emergence of the scientific group psychotherapy movement into scientific history, its *kairos*, was the year 1932, within the fold of the American Psychiatric Association.

J. L. Moreno, M. D.,
Beacon, N. Y.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: In stating: "Moreno claims for himself the first coining of the term 'group psychotherapy,' without, however, substantiating his claim, although he cites many 'witnesses,' such as . . .," in my review I quoted Dr. Moreno as having quoted his witnesses. I have not stated that Dr. Moreno was not the first person to use

the term "group psychotherapy"; I have stated that he *claimed* to be the first one.

Dr. Moreno refers to *Application of the Group Method to Classification*, published in 1932, and in 1957, entitled: *The First Book Moreno on Group Psychotherapy*. Moreno 25th Anniversary 1932-1957 Moreno. The heading of page 60 reads: "Concerning Group Therapy." However, the text does not mention the word "therapy" once.

The Glossary contains a definition of "group therapy: A Method of psychotherapy which combines the technique of assignment with the technique of spontaneous treatment." I am still at a loss to understand why group therapy has to be explained since it does not occur elsewhere in the text.

On the other hand, I received assurances from individuals that they, too, laid claim to having invented the term "group psychotherapy." Dr. Rudolf Dreikurs showed me his manuscript containing the protocols of his group psychotherapy sessions in his private practice in Vienna in 1927. According to Dr. Corsini (having published one of the most comprehensive bibliographies—some 1,700 titles!—in *Group Psychotherapy*), the first writer having used the term "group therapy" in the title of a publication was L. C. Marsh in 1935. Dr. George R.

Bach and I have shown in *Die Zeitschrift fuer Psycho-Somatische Medizin* (1956) that the French neurologists, J. Camus and P. Pagniez, used the term group therapy in their paper, "Isolation and Psychotherapy," published by Alcan in Paris in 1904! S. R. Slavson claims of having used the term in 1935 at the Jewish Board of Guardians in New York.

It is obvious that Dr. Moreno has played a large and continuing part in group psychotherapy of the particular variety in which he is interested. I would like to make it clear that any statements about the origin of the phrase "group psychotherapy" is intended only to define its origin historically and not to detract from Dr. Moreno's part in this history.

Hans A. Illing, Ph.D.,
Los Angeles, Calif.

MALADIE DES TICS IN CHILDREN

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: I found the article, "A Clinical Study of Gilles de la Tourette's Disease (*Maladie des Tics*) in Children," by Eisenberg *et al.* (Am. J. Psychiat., 115, No. 8, Feb. 1959) very interesting. I would like to make several points about the article as follows.

The authors make the following statement: "Its rarity is attested to by the infrequency of case reports." This is not necessarily so. I have personally worked with 2 such cases in the last 4 years. The first case was seen in 1954; I am currently working with the second case which was first seen one year ago. It would be equally wrong to conclude that, because I have seen 2 cases in 4 years, therefore *maladie des tics* is commonly seen. I do not believe there is necessarily a correlation between the frequency with which this type of case occurs and the number of cases reported in the literature. For example, Ferenczi, whose work on tics(1) is widely quoted, depended on the work of Meige and Feindel(2) for much of his case material. Wilson, who is quoted as saying that the prognosis in *maladie des tics* is "sinister,"

also adds that at the time of writing he had not seen a case in years.

The authors state that "The etiology of Gilles de la Tourette's disease remains as obscure as it was in his time. . . ." They also imply that therapy so far has not been successful except where one could modify the environment. They unequivocally dismiss pharmacologic therapy as ineffective in their cases.

It is difficult to generalize on the basis of 2 cases but my experience differs from theirs in relation to etiology and therapy.

The first case was that of a 14 year old girl first seen 5 years ago. The tics, behavior and learning difficulties started after a severe case of measles when the child was 8. The neurological examination only noted the characteristic tics; the EEG was difficult to evaluate because of the movements. The psychological examination was of significance because the results as compared to a previous psychological record pointed to some deterioration. The psychological profile also showed indications of organic involvement. My impression was that this was a post-encephalitis case and would not respond to psychotherapy. However, because the girl did not respond to medication of various kinds, I agreed to refer her to a colleague who believed he might help

NEWS AND NOTES

KAREN HORNEY CLINIC FELLOWSHIP OF THE AMERICAN INSTITUTE FOR PSYCHOANALYSIS.—A \$5,000 fellowship is available to psychiatrists applying for the full course of training in the American Institute for Psychoanalysis. The recipient will be granted \$2,500 per annum during the second and third years.

Candidates must be graduates of an A.M.A. accredited medical school and have completed a one year general internship and two years psychiatric residency in hospitals approved by the A.M.A.

For further information write to the Registrar, Miss Janet Frey, American Institute of Psychoanalysis, 220 W. 98th St., New York 25, N. Y.

BIBLIOGRAPHY OF PSYCHOPHARMACOLOGY.—The National Library of Medicine of the Public Health Service has issued a 258 page bibliography entitled *Psychopharmacology*, compiled by Anne E. Caldwell, M.D. It contains references to approximately 2,500 articles, published between Jan. 1952 and Dec. 1956, concerned with the effect of psychopharmacologic agents on the psychologic, behavioral and encephalographic reactions of normal subjects, patients and laboratory animals.

The book is divided into 4 sections: 1. Drug Index, which lists the chemical, trade and generic names of drugs, drug groups and trade names of drug combinations with their composition; 2. Subject List of Drugs, and alphabetical listing with references; 3. Ancillary Subject List of Special Conditions and 4. An alphabetical Author List.

The book may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price, \$1.50.

DR. NOYES RETIRES.—Dr. John E. Davis, Commissioner of Mental Health for the State of Pennsylvania, sends the information that informal ceremonies honoring Dr. Arthur P. Noyes, former President of

the APA, on the occasion of his retirement as superintendent of Norristown State Hospital, were held on Thursday, June 11, 1959, at the Hospital.

Since 1916 Dr. Noyes has held important posts in several hospitals in the east including Boston Psychopathic, St. Elizabeths and the Rhode Island State Hospital for Mental Diseases. He was superintendent at the latter institute for seven years when he was called to the superintendency of the Norristown State Hospital in 1936. He is the author of *Modern Clinical Psychiatry* and co-author of *Textbook of Psychiatric Nursing*, each in its fifth edition.

WORLD REHABILITATION FUND, INC.—The creation of the Frank H. Rowe Memorial Fellowship in Rehabilitation for post-graduate training in physical medicine and rehabilitation in the United States for a physician from Australia was announced, June 1, 1959, simultaneously in Melbourne and New York. The fellowship is being given by the World Rehabilitation Fund, Inc. in cooperation with the Australian Advisory Council for the Physically Handicapped, the International Society for the Welfare of Cripples, and the Smith Kline and French Foundation. The Fellowship was created to honor the late Frank H. Rowe, C.B.E., Director-General of Social Services, Commonwealth of Australia, 1949-1958, for his contribution to the development of rehabilitation services for the physically handicapped internationally.

The Fellowship is for a minimum of one year and is subject to renewal. Training under the Frank H. Rowe Memorial Fellowship will be given at the Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, N. Y. C.

Currently there are 71 trainees (57 physicians and 14 non-physicians) from 35 different nations receiving long-term advanced training in the United States under the auspices of the fund.

Address: World Rehabilitation Fund, Inc., 400 East 34th St., New York 16, N. Y. President: Dr. Howard A. Rusk.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.—In February, 1959, the American Board was authorized to undertake sub-specialty certification in Child Psychiatry. The following physicians, all Diplomates in General Psychiatry of the American Board of Psychiatry and Neurology, have been certified in the sub-specialty of Child Psychiatry:

Frederick H. Allen, M.D., Philadelphia 29, Pa.

Frank J. Curran, M.D., New York 28, N. Y.

Othilda Krug, M.D., Cincinnati 29, Ohio.

William Siddon Langford, M.D., New York 32, N. Y.

Hyman S. Lippman, M.D., St. Paul 4, Minn.

Joseph Franklin Robinson, M.D., Wilkes-Barre, Pa.

THE ACADEMY OF PSYCHOSOMATIC MEDICINE.—The sixth annual meeting of The Academy will be held October 15-17, 1959 at the Sheraton-Cleveland Hotel in Cleveland, Ohio. The meeting will be directed to the needs of nonpsychiatric physicians. Everyday office management of psychosomatic problems will be dealt with in formal papers, symposia, panel discussions, and small study groups.

The meeting will be open to physicians, psychologists, social workers and nurses. Information may be obtained from Dr. Bertram B. Moss, Suite 1035, 55 East Washington St., Chicago 2, Ill.

HISTORY OF THE BEHAVIORAL SCIENCES NEWSLETTER.—The history of the development of the behavioral sciences is a relatively new research area, to which numerous scattered workers have been attracted. As a medium of communication and information a newsletter is to be established in the interests of anthropologists, psychiatrists, psychologists, and any others working in this area. It will provide a means of requesting specialized information and bibliographical material; and it

will list new books and cooperative surveys and developments pertinent to this field.

The specific purpose of the first issue is to contact those interested in the behavioral sciences, to solicit their suggestions and to obtain names and addresses from them of others interested in this area.

For further information write to Dr. Eric T. Carlson, Payne Whitney Psychiatric Clinic, New York Hospital, 525 East 68th St., New York 21, N. Y.

EDUCATION OF PSYCHIATRIC AIDES.—The National League for Nursing has published a 27-page booklet entitled *Suggestions for Experimentation in the Education of Psychiatric Aides*, which points out the importance of preservice training of psychiatric aides and makes suggestions as to objectives, curriculum and evaluation of the students.

The pamphlet is available from The National League for Nursing, 10 Columbus Circle, New York 19, N. Y. Price, \$1.00.

EASTERN PSYCHIATRIC RESEARCH ASSOC., INC.—The Association will hold its fourth annual meeting October 23-24, 1959, at the Waldorf-Astoria Hotel, N. Y. C. Papers will be given under the general headings of Chemical and Behavioral Aspects of Psychoses; and a Symposium on the Genetics of Disordered Behavior. There will also be a panel discussion on Neuropsychiatric Aspects of Space and Depth Medicine.

For further information write to David J. Impastato, M.D., Eastern Psychiatric Research Assoc., Inc., 40 Fifth Ave., New York, N. Y.

NEW YORK STATE NARCOTIC ADDICTION RESEARCH.—At Manhattan State Hospital is now located the first research unit in narcotic addiction in New York State. It will contain 55 beds for inpatients and ample provision also for outpatient care.

The work of the center will be integrated with the new program of treatment and clinical research conducted by the city of New York.

MID-CONTINENT PSYCHIATRIC ASSOCIATION.—The annual meeting of the Mid-

Continent Psychiatric Association will be held September 18-20, 1959, at the Holiday Inn Hotel, St. Louis County, Mo. President James N. Haddock, St. Louis, will preside and the incoming president is Dr. Louis Cohen, Little Rock, Ark. Twelve scientific papers will be presented. Out-of-town speakers will include Dr. Adolph Sahs, Iowa City; Dr. Joseph B. Parker, Jr., Lexington, Ky.; Dr. Manfred Guttmacher, Baltimore; Dr. John O'Hearne, Kansas City; Dr. Charles Shagass, Iowa City; and Dr. Herbert Modlin, Topeka.

For further information write James N. Haddock, M.D., President, 950 Francis Place, Clayton 5, Mo.

NATIONAL ASSOCIATION FOR MENTAL HEALTH.—In its Annual Report, issued June 8, 1959, the N.A.M.H. stated that the number of resident patients in state and county mental hospitals stood at 545,000 on December 31, 1958, compared to 548,000 at the end of 1957, a reduction of approximately one-half of one percent. Admissions in 1958 rose sharply, from 195,000 in 1957 to 210,000 in 1958, a rise of about 8%.

The report also mentioned that federal government appropriations for research, training and community services rose substantially in 1958. Congress appropriated \$52,000,000 for the budget of the National Institute of Mental Health, compared with \$37,000,000 in 1957.

NORTH PACIFIC DISTRICT BRANCH, APA.—The third divisional meeting of Area 5 will be held in Seattle, Wash., September 24-27 as a joint meeting with the West Coast Psychoanalytic Society. Members not living in the 13 western states may make hotel reservations by writing Marcus R. Stuen, M.D., 1206 South 11th St., Building 17, Tacoma 5, Wash.

The joint meeting will be preceded by meetings of the Western Group Psychotherapy Society, September 21-23 and two sponsored by the Western Interstate Commission on Higher Education, Directors of Nursing Services and Directors of Education at Lake Wilderness, September 21-23 and Mental Hospital Superintendents the afternoon and evening of September 23.

CAMBRIDGE UNIVERSITY SYMPOSIUM ON DEPRESSION.—This symposium will be held at Cambridge from September 22 to 26, 1959, inclusive. It will consist of lectures and discussions on the following 4 aspects of the subject: clinical, neuropharmacological, psychological, therapeutic, one of which will be discussed each day. The Proceedings of the symposium will be in English and will be published by the Cambridge University Press.

Accommodation and board will be provided in Clare College, and inclusive of gratuities will be £10 10s. The fee for the full course is £6 6s. 0d.; part-time, £1 11s. 6d. per day.

The symposium will be introduced by Prof. Aubrey Lewis, Maudsley Hospital, London; the lecturers will include Prof. Leucio Bini, Rome; Prof. Cazzullo, Milan; Dr. E. Beresford Davies, Cambridge; Dr. Russell Davis, Cambridge; Dr. Deniker, Paris; Dr. Feldberg, London; Dr. James Flind, London; Dr. Hoffer, London; Prof. Mayer-Gross, Birmingham; Prof. Rothlin, Basle; Dr. Sargant, London; Prof. Jackson Smith, Nebraska; Prof. Zamgwill, Cambridge.

DIRECTORS OF PRIVATE NON-PROFIT MENTAL INSTITUTIONS MEET.—In 1844 Dr. Thomas Kirkbride and 12 other heads of hospitals held a meeting on the grounds of the Pennsylvania Hospital in Philadelphia, at what was then a rather new hospital at 44th and Market Streets.

Through the years the directors of the private non-profit mental institutions on the Atlantic coast have met from time to time and discussed their mutual problems. This practice has continued to the present time. On June 12, 1959, at the invitation of Dr. Lauren H. Smith, the Physician-in-Chief and Administrator of The Institute of the Pennsylvania Hospital, 8 directors of these same institutions visited the new Institute of the Pennsylvania Hospital which was opened on January 28, 1959, simultaneously with the closing of the famous old 44th Street Department. The directors spent some time in going through the colorful new building which is furnished in modern furnishings and air conditioned throughout. They then adjourned to a luncheon meet-

ing where many problems were reviewed.

Of special interest were studies furnished by each director of the ratio of the nursing personnel to the average census of patients, emphasizing the interrelationship of the nursing education division to the relative costs of such in the hospital treatment program. The group felt that it might be advisable, if possible, to undertake a short

research study as to the cost of nursing education in private non-profit mental hospitals, and how much it added to the financial burden carried by families, even though it was obvious that the presence of such nursing schools in these psychiatric hospitals maintain a very desirable nurse patient ratio that added much to their treatment program.

OFFICIAL REPORTS

HOSPITALS APPROVED AND CONDITIONALLY APPROVED BY THE CENTRAL INSPECTION BOARD

As of May 15, 1959, the following hospitals have been added to the list of the Central Inspection Board published in the August 1958 issue of this Journal, page 173:

Approved: Compton Sanitarium, Compton, Cal.; Hall-Brooke Sanitarium, Green Farms, Conn.; Anclote Manor, Tarpon Springs, Fla.; Brawner's Sanitarium, Smyrna, Ga.; Falkirk Hospital, Central Valley, N. Y.; Four Winds, Katonah, N. Y., Appalachian Hall, Asheville, N. C.; St. Albans Psychiatric Hospital, Radford, Va.; Tucker Hospital, Inc., Richmond, Va.; Westbrook Sanatorium, Richmond, Va.; and Clinique Roy-Rousseau, Mastai, P. Q., Canada (all private hospitals).

Conditionally Approved: Clearview Hospital, Evansville, Ind. (private hospital).

THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.

The following candidates were certified by this Board after examination in New Orleans, La., March 16-17, 1959.

PSYCHIATRY

- Abrams, Arnold Louis, 270 Commonwealth Ave., Boston 15, Mass.
 Agnew, Paul Comstock, 679 North Michigan Ave., Chicago 11, Ill.
 Alvarez, Flavio E., Clausells Bldg., Ponce, Puerto Rico.
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 Burke, Henry L., 725 North University Ave., Ann Arbor, Mich.
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 Calobrisi, Arcangelo, 110 East 36th St., New York 16, N. Y.
 Carleton, John Lowndes, Medical Arts Bldg., 1421 Chapala St., Santa Barbara, Calif.
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 Carson, James E., Brookville Medical Bldg., 6779 Memphis Ave., Brooklyn 9, Ohio.
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 Conkling, Frederic Everett, III, Jackson Memorial Hosp., Miami 36, Fla.
 Cray, Gordon Cameron, 850 Middlefield Rd., Palo Alto, Calif.
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 Dominguez, Luis, 31 West 86th St., New York 24, N. Y.
 Dugan, Thomas M., 417 Lincoln St., Johnstown, Pa.
 Ferriz, Jorge, 12 West 96th St., New York 25, N. Y.
 Finney, Joseph Claude Jeans, 207 West Washington St., Urbana, Ill.
 Fisher, Saul H., 124 East 65th St., New York 21, N. Y.
 Fitz Gerald, Joseph A., 1315 West Tenth St., Indianapolis 7, Ind.
 Frank, Alan, Student Health Service, University of Colorado, Boulder, Colo.
 Fuller, David Henry, Jr., State Hosp., Raleigh, N. C.
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 Ginsberg, James P., 612 North Michigan Ave., Chicago 11, Ill.
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 Gray, Helen Marie, 206 East Chestnut St., Louisville 2, Ky.
 Green, Joseph Martin, Kansas Treatment Center for Children, Third and Oakley, Topeka, Kan.
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 Hastings, Philip Ross, VA Hosp., Canandaigua, N. Y.
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 Horenstein, Simon, 360 North Bedford Dr., Beverly Hills, Calif.

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Leah, Lawrence, 100 Indiana University Medical Center, 100 West Michigan St., Indianapolis 2, Ind.
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Marshall, Marion G., Schenley Park Apts., Fifth Ave. and Schenley Blvd., Pittsburgh 18, Pa.
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McDonald, Marjorie, Hanna Pavilion, University Hospitals, Cleveland 6, Ohio.
McKee, Douglas, 2109 Clara Ave., Raleigh, N. C.
Meadows, Richard L., Topeka State Hosp., Topeka, Kan.
Meyers, Edward F., 520 N. Main St., Orlando, Fla.
Meyers, Monte J., 1800 Sheridan Rd., Highland Park, Ill.
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NEUROLOGY

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Truscott, B. Lionel, 2nd General Hosp., APO 180, New York, N. Y.
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Webster, Henry de Forest, Massachusetts General Hosp., Fruit St., Boston 14, Mass.

BOOK REVIEWS

THE SANCTITY OF LIFE AND THE CRIMINAL LAW. By *Glanville Williams*. (New York : Alfred A. Knopf, 1957, pp. xxii + 350. \$5.50.)

Professor Williams is a Fellow of Jesus College, Cambridge. In 1956 he delivered the James S. Carpenter Lectures during his term as Visiting Professor on the Faculty of Law at Columbia University, New York City. This book presents an amplified version of these lectures.

It is a courageous book. It considers questions of "legal biology and legal ethics," the function of the law in the service of man and for his protection, and desirable changes in the law to that end.

The titles of the 8 chapters : The Protection of Human Life, The Control of Conception, Sterilization, Artificial Insemination, The Law of Abortion, The Problem of Abortion : Morality and the Social Facts, The Prohibition of Suicide, Euthanasia, will indicate the highly controversial nature of the material the author deals with. He presents fully the factual background of these various issues and seeks to keep their treatment objective. He does not hesitate however to express his own considered opinion on matters where, so far, there is no consensus. It is these opinions that give the book its special value.

In each of these chapters the author considers the problem involved from the standpoint not only of British law but also of law in the United States and other countries ; and where existing legislation does not minister to social welfare and is inhumanly prejudicial to the welfare of the person who may be accused thereunder, he points clearly to the need for change. In the case of infanticide by the mother, for example, where so many extenuating circumstances may exist, he asks for "greater exercise of the discretion of prosecuting authorities," and reminds us that "one element in the legal process is ineluctable—the distress of mind caused to the offender by being summoned before a court, particularly where this involves much publicity in the press. This reinforces the argument that a legal inquisition into conduct is not justified on moral or religious grounds if no sufficient or social purpose is to be served."

Recalling that Malthusian prophesy is being frighteningly fulfilled in our time, and that "already two-thirds of the world's population are living pitifully on or below the margin of

subsistence," Professor Williams calls for sane laws dealing with birth control, which at present largely disregard the rights and well-being of the female half of the population. He quotes an American survey in 1943, when 85 percent of women questioned favored contraceptive advice for married women as did more than 2/3 of the Catholic women questioned. And he points out that "it is the religious objections that have done so much to retard medical exploration in this field of knowledge. When religious opinions are embedded in the law, the cramping effect upon free scientific enquiry is even more disastrous." Of the religious argument that contraception is "against nature" he remarks, "This extremely primitive if not blasphemous theology can perhaps be sufficiently answered by pointing out that nature evidently intends males to have beards, which intention they steadily frustrate by the use of the razor."

The question of artificial insemination "is not specially dealt with either in American or English law." The author surveys the range of rulings and opinions, both legal and theological, which are rather more curious, sometimes amusing, than edifying.

The law concerning therapeutic abortion has become considerably softened in recent years. Under the National Health Service in Britain, a large London hospital reported that in the year 1953, 46 therapeutic abortions had been performed, as compared with 9 in 1938.

Though opinions are divided, Protestants and Jews generally are favorable to therapeutic abortion. "The Church of Rome, on the other hand, remains adamantly opposed . . . even to save the life of the mother." For comparison turn to Japan where sterilization and abortion for medical, economic or eugenic reasons were legalized in 1948. For the year 1954 operations under this law numbered 1,143,059. In Scandinavian countries abortion is authorized on much wider grounds than strictly medical. In Denmark pregnancy may be terminated to prevent serious danger to the life or health of the woman based on "(1) present physical or mental illness ; (2) threatening physical or mental weakness ; (3) the social circumstances under which the woman has to live."

A scholarly chapter deals with attitudes to suicide from early times on, and with punishment for attempted suicide in various countries. Thomas Aquinas held that since man was the property of God, only God could de-

cide on his life and death. Seneca on the contrary, had asserted the jurisdiction of the individual over his own life.

Attempted suicide is not an offence in Indiana, Iowa, Maine, New York, Pennsylvania; it is also unpunishable in Ohio, Illinois and Texas.

The final chapter discusses a particularly controversial subject—euthanasia. The author reviews opinions and rulings, legal and theocratic, and points to the opinion expressed by the Catholic Sir Thomas More, in his *Utopia* where any that are "taken with a torturing and lingering pain, so that there is no hope either of cure or ease, the priests and magistrates come and exhort them that, since they are now unable to go on with the business of life, and are become a burden to themselves and all about them, and they have really outlived themselves, they should . . . choose rather to die since they cannot live but in much misery."

Professor Williams presents and accepts the view that "a man is entitled to demand the release of death from hopeless pain and a physician who gives this release is entitled to moral and legal absolution for his act."

To sum up: a fully documented statement of existing laws relative to some of the most vital concerns of human existence, and the author's enlightened and humane attitude thereto.
C.B.F.

A SKEPTICAL PSYCHOANALYST. By *Kenneth M. Colby, M. D.* (New York: Ronald Press, 1958. pp. 145. \$3.75.)

TECHNIC AND PRACTICE OF PSYCHOANALYSIS. By *Leon J. Saul, M. D.* (Philadelphia: Lippincott, 1958. pp. 244. \$8.00.)

Growing fascination with new drugs and increasing interest in brain physiology have taken some of the spotlight from psychoanalysis. However, psychoanalysis still continues to enchant new entrants into psychiatry; and veteran practitioners show no flagging of loyalty.

These two new books reflect the continuing interest in psychoanalysis. Dr. Colby's work is a medley of marginalia, a collection of witty footnotes on psychoanalysis. Dr. Saul's text is a systematic handbook of technic. Dr. Colby's essay on "Why Newton Hated Apples" is a bouncing burlesque of solemn science writing, as well as a charming bit of whimsy. His "Letter to a Young Analyst" is wise as well as witty. He makes pungent remarks about organizations, about psychoanalysts, about medical journalism, and about interprofessional relations. He salts his text with many Colby-

isms. (Example "psychoanalysts like to say that they are only human but they don't really believe it.") He offers an ingenious technic for self-analysis with a tape recorder (strictly for professional use however; he does not believe in extending do-it-yourself to the patient.) He notes how we overemphasize resistance but have little to say about facilitation of analysis—and he coins a new word for this ("proceedance") and suggests how it may be improved.

Dr. Colby is one of the few psychiatric writers to be interested in the inner thought processes of the analyst. What the book lacks in organization, it makes up in sagacity. It is a pleasant night-table volume—and is a good gift to a friend interested in psychoanalysis, professionally or personally.

Dr. Saul is a practitioner with a superior sense of the analyst's social responsibilities. He offers a better-than average account of how to get anamnestic data. He includes an interesting discussion of the mechanics of analysis. His little essay on the couch is a monographic gem. Unlike many of his brethren, he recognizes that some patients can become addicted to psychoanalysis. I think he heckles the reader with footnotes—there are at least 65 citations to Freud alone, and in less than 250 pages of text he has some 120 footnotes.

The book is beautifully constructed with chapters on failures, difficulties, transference, dream analysis, free association and on the technics of starting and terminating treatment. One of the nice parts of Dr. Saul's book is constant re-orientation to reality. He does not make a fetish out of dogmatism.

American psychiatric literature is well supplied with books on psychoanalysis. But Dr. Saul and Dr. Colby each offer us a fresh point of view. In its short life, psychoanalysis has developed a doctrinal caking that sometimes subordinates the patient to the theory. These two books are healthy antidotes to such ritualism.

HENRY A. DAVIDSON, M. D.,
Cedar Grove, N. J.

ELEKTROENCEPHALOGRAPHISCHE STUDIEN BEI HIRNTUMOREN. (ELECTROENCEPHALOGRAPHIC STUDIES ON BRAIN TUMORS.) By *Rudolf Hess.* (Stuttgart: Georg. Thieme, Verlag, 1958. pp. 106. \$4.20.)

Hess' study is based on the analysis of the electroencephalographic records of 682 verified and localized brain tumor cases from Krakenbühl's Neurosurgical Clinic in Zürich. It deals with the relationship between localiza-

tion and the EEG changes. The different types of diffuse and focal electroencephalographic abnormalities observed are described in detail and correlated with the various tumor sites. It is not concerned with the influence the nature of the tumor and its growth might have on the EEG. The study, however, is not purely statistical. Important practical and theoretical conclusions are offered. The findings of former investigators are discussed and largely confirmed. In some instances older views will have to be modified on the basis of Hess' broader material. In this reviewer's opinion the main value of the present study consists, aside from the extensive material on which it is based, in the extreme caution which the author applies in his conclusions modestly called hypothetical.

V. A. KRAL, M. D.,
McGill University,
Montreal, Can.

THERAPEUTIC EXERCISE. Edited by Sidney Licht, M. D. (Baltimore, Md.: Waverly Press, 1958. pp. 893. \$16.00.)

This book, the third volume of the Physical Medicine Library Series, is an excellent collection of 35 articles describing in detail the values of correctly prescribed exercises primarily in muscular or neurologic disorders.

In the chapters covering Occupational Therapy and Sports very little is stated concerning their use in psychic disorders. However, the chapter, Exercise in Mental Disease, by John Davis, Ph.D., formerly with the Veterans' Administration, indicates clearly how an individually prescribed therapeutic program can aid in reintegration and socialization. Specific exercises and games are suggested for each type of illness and these activities are described in detail. The closing chapter should be of interest to everyone, as it deals with Exercise for Healthy Persons and describes proper postures for sitting, standing, lifting and even sleeping. This book is a valuable reference for any condition requiring muscle training and reeducation.

ROBERT S. SCHOPBACH, M.D.,
Detroit, Mich.

THE HANGOVER. By Benjamin Karpman, M. D. (Springfield, Ill.: Charles C Thomas, 1958, \$9.50.)

This voluminous treatise on the hangover consists of personal accounts of what 14 patients consider a hangover, much of it in quotation marks. There are 7 male and 7 female so-called case histories, but all except one con-

sists only of subjective reminiscences of the trials and tribulations during varying periods that followed their alcoholic sprees or binges. These experiences are called "the hangover" which is not otherwise defined. These episodes vary from what the average non-alcoholic person might consider a hangover, namely the period of malaise and ill-feeling with or without specific bodily symptoms which may last a fraction of a day, to periods stretching into days and weeks, covering the whole range of alcoholic symptomatology including in some instances hallucinosis, delirium tremens, and other types of psychotic behavior, even fugue states. The book proves without question that whatever alcoholics call the hangover or in general the post-spree period is one of greatest misery and self-torture, not to mention the accompanying unpleasantness for whom-ever may be around the patient at that time. It is an indication of the seriousness of these patients' illnesses that most were isolated, had no relatives or friends to whom they could turn and usually were dependent in their misery upon the public caretaker agencies, the police, landlords, and public hospitals.

Most of the stories are well written, some fascinating but even then they are no more than autobiographical sketches and quite sketchy in many instances. None affords as much insight or makes as good reading as Jackson's *Lost Weekend*, in which one can find almost everything that is to be found in this book.

A serious defect of the book is that there is no description of method whatsoever. Only in the acknowledgment in which the author expresses his appreciation to his patients does one learn in passing that the material was obtained from written accounts and from interviews. Presumably the interviews were all the author's, but this is not so stated, nor the type of interview. In no case is a distinction made as to which material was written by the patient and which was obtained in interpersonal process. The author is, therefore, justified in keeping the section of interpretation which follows each case history limited essentially to a brief summary of what the patient has communicated, and none of these interpretations extend to much over 1 to 2 pages. To the reader, material of this kind remains scientifically meaningless, except for random speculation, because the context in which the material was obtained is not presented and the relation between interviewer and interviewee is not defined.

The author's thesis that a personality dis-

order underlies alcoholism in every case, with which the reviewer agrees—is neither supported nor refuted by this book. Only in one case of the 14 was treatment brought to a **satisfactory conclusion in the sense** that the patient herself understood the roots of her difficulties which led to drinking, and at least her story implied that she had resolved some of her basic conflicts and changed her attitudes and behavior. Almost all the other patients paid lip service to the author's thesis, but the author himself repeatedly points out how "unreliable" their accounts are. Obviously to write these accounts the patients must have had a relationship with the author or somebody and the skeptic can easily suspect that therefore the patient would write whatever formulation would please the interviewer. The author has demonstrated, however, that the period called here the hangover can be used, if sufficiently remembered by the patient, somewhat like a projective test or a drug interview because in this situation the patient's mental difficulties apparently come more into consciousness than at other times and are available, therefore, for verbal or other behavioral communication.

STEPHEN FLECK, M.D.,
New Haven, Conn.

THE MATRIX OF MEDICINE. Edited by *Nicolas Møller*. (London: Pitman Medical Publishing Company, 1958, pp. 234. \$9.00).

This book, more clearly than any other which I have seen, demonstrates the changing nature of medical practice, especially the growing recognition that medicine (and the patient) is embedded in a social matrix of great consequence to its activity.

The editor, a University physician, has collected 13 chapters by practitioners of unusual perception in fields ranging from endocrinology to chest disease. They each show in a lively style the intimate relation between practice and social conditions, and demonstrate the necessity to take these into account. For example, the discussant of industrial medicine strongly questions the usefulness of the routine physical examination in modern industrial conditions; a heresy which he supports admirably.

It is unfortunate that there is no contribution from psychiatry, the field most directly affected by society, but the entire volume is a measure of the success of teaching concerning the personality, and in some ways may demonstrate how a pupil may threaten to outstrip a tutor.

This is recommended reading for all who

believe that psychiatry is a field of social and socialized medicine.

BRYANT M. WEDGE, M.D.,
London, Eng.

READINGS IN MEDICAL CARE. Edited by the Committee on Medical Care Teaching of the Association of Teachers of Preventive Medicine. (Chapel Hill, N. C.: Univ. of North Carolina Press, 1958, pp. 708. \$6.50.)

Medical care is a term used with reference to the organized provision of medical services to the populace. Whereas the standard of medical skill in the United States is of the highest calibre, many of the citizens received inadequate medical care chiefly because of economic and geographic hindrances. This book deals with the extent of the problems of providing adequate medical services, the ways in which attempts are being made to improve medical care and the ideals toward which group endeavours should aspire.

The book is a collection of reprinted portions of articles and books by a variety of authors. The purpose is to present teaching material on the organization of medical care. To this end over 120 "readings" have been arranged under the headings:

1. Problems in Medical Care: The General Background;
2. The National Health Picture;
3. Adequacy of Medical Care;
4. The Costs of Medical Care;
5. The Medical Care Team;
6. Hospitals;
7. Co-ordination in Health and Medical Service;
8. Care of Long-term Illness;
9. Rural Medical Care;
10. Public Medical Care;
11. Medical Care in Industry;
12. Medical Care Insurance;
13. Principles and Proposals.

Most of the writings are informative but few are inspiring. In some sections statistical data numbs the brain, in others tedious repetition or labouring of the obvious dims one's interest. To attempt consecutive reading is to court mental indigestion. In fact, were it not that the result is an exceedingly useful source book for references, one feels that the collection of writings might make the basis for a good book if someone had the energy and talent to write it.

Psychiatry receives less attention than the problems of mental illness deserve—less than 20 pages of 708. Perhaps the Association of Teachers of Preventive Medicine are less familiar with mental illness than with, for example, industrial medicine or the rehabilitation of physically-handicapped people.

The sections devoted to Health Insurance

deserve study. The forces which have resulted in State Health Insurance in many countries are obviously at work in the United States, the most prosperous country in the world.

The book will be of great value to anyone responsible for planning the provision of medical services on a large scale or to teachers in the field of Public Health.

W. B. SPAULDING, M.D.,
Toronto, Can.

MENTAL AND PHYSICAL ILLNESS AMONG PAUPERS IN STOCKHOLM. By *Gunnar Inghe*. (Copenhagen: Ejnar Munksgaard, 1958.)

"This Report is part of an investigation concerning the condition of persons in receipt of public assistance in Stockholm, and of the causes of their predicament." An introductory statement of the problem, gives some interesting historical material. Then follows a short review of previous surveys. A section of this, dealing with mental illness is particularly good, and complete. The summary is as follows—"This short survey shows that paupers deviate considerably from the general population in medical respects. Both the mental and physical morbidity are probably very excessive. It is, however, still not fully known which illnesses are particularly frequent."

Then follow a chapter dealing with different concepts of morbidity and one on statistical methods. Next comes a chapter on the subjects of the survey, a description of Stockholm and the selection of the paupers. A control group was matched with the pauper group. An attempt was made to find a "social twin" for each pauper. We have married, single and cohabiting persons—somewhat of a surprise to American readers! Next comes a method of obtaining data from interviews, medical examinations and from histories. Just how the mental diagnosis was made is not entirely clear. That there were defects in the material is readily acknowledged.

Chapter 6 deals with mental illness; a number of case histories are given. The term mental insufficiency is used, apparently much as the term *neurosis* would be used in this country. Insufficiency is described as conditions characterized as uneasiness, anxiety, despair, irritability, depression, feelings of discomfort, discontent, compulsive symptoms, feelings of strain and stress or other nervous manifestations. One questions whether this term is a proper substitute for the modern concept of the *neurosis*. The fact that 81% of the male and 64% of the female paupers were suffering

from mental disorder at the medical examination is significant, also, 1.3% of the males and 27% of the females among the controls.

"In summing up it may be said that the differences between the samples regarding the prevalence of, and risks for different mental illnesses were somewhat variable. This perhaps was partly due to the small samples. On the whole, however, the morbidity was higher for the paupers than for the controls. This applies to all the main groups of mental illnesses, even if the differences were not always significant."

There follows a similar study of physical disease. The resume and conclusions are printed in French and Russian at the end of the book. There is an elaborate and extensive bibliography.

WARREN A. STEARNS, M.D.,
Billerica, Mass.

NEUROPATHOLOGY. By J. G. Greenfield, W. Blackwood, A. Meyer, W. H. McMenamy and R. M. Norman. (London: Edward Arnold, Baltimore: Williams and Wilkins, 1958, pp. 640. \$20.00.)

An outstanding feature throughout the history of neuropathology has been the value of the contributions made by investigators whose primary interest was not pathology—by neurologists, neurosurgeons and psychiatrists. The names of Alzheimer and Nissl, both of whom were practising psychiatrists, are firmly embedded in the terminology of the subject. More recently, general pathologists have been taking increasing interest in this branch of pathology. In Britain, neuropathology has always largely stemmed from general pathology, and this broad outlook is evident in the present book which is the work of 5 eminent British neuropathologists led by the late Dr. J. G. Greenfield. Although much has been contributed by his collaborators, the book may well be regarded as the culmination of Dr. Greenfield's long and illustrious career.

The book gives a systematic account of the pathology of neurological disease other than tumours. In the preface we are promised a companion volume, dealing with tumours of the nervous system, edited by Professor Dorothy Russell. The main emphasis throughout is on classical descriptive histopathology, but the authors give brief clinical outlines and refer to experimental data in some instances. Biochemical findings are also discussed, for example abnormalities of copper metabolism in the account of Wilson's disease.

The work opens with a chapter by Dr. Greenfield on the various reactions of nerve

the brain, especially in lesions of a more extensive or subcortical nature, in which the localization of lesions with the help of the study of motor topography, is confined to study by field type maps available. These tables are arranged by Piek and the author in a simple manner. The appearance of the drawings of some other hemispheres and cerebral fiber tracts, in some of the pages, and the remaining pages is devoted to maps and drawings. He is less clear in his description of the motor fiber tracts of the brain in comparison with the more detailed studies in the pathogenesis of cerebral atrophy of the brain.

In the last, Meyer reviews a wide field of subjects, the study and the effects of various types of lesions, cortical, subcortical and mixed, giving evidence of regions, consequences and signs. In a chapter on Spina, he discusses the anatomy of the spinal cord, the temporal axis, he includes in the text that which would have been omitted in the rest of the book, both in the anatomy and in the clinical course. None can deny the statement that he used the further investigation of the problem, being post-mortem material in addition to clinical specimens, so as to make possible a complete survey of the motor system.

In a somewhat brief chapter, Meyer collects the opinions of various investigators regarding a possible morphological substratum for schizophrenia and certain other psychoses. He points to the lack of controls in the series described by some investigators and to the frequent failure to consider the effects of concomitant disease in chronically ill, debilitated patients. The original demonstrations have proved a more rewarding subject for pathological study: the lesions associated with the names of Alzheimer, of Pick and of Jakob and Creutzfeldt are described in detail and fully documented in a chapter by McMenemey; he also discusses Huntington's chorea. Included in this chapter are short sections by Greenfield on hypodenticular degeneration, and by Meyer on the Huntington-Spatz syndrome.

A superbly illustrated chapter by R. M. Norman, on developmental malformations, birth injury and diseases of early life covers in masterly fashion the wide range of conditions in this essentially clinical grouping.

Also included in the book are chapters on demyelinating disease, the system degenerations, the peripheral nerves, trauma and the effects of disease of the bony coverings of the nervous system, all written by Greenfield and illuminated by his vast experience.

Throughout the work, the importance of the subject is detailed and especially history, was a stimulus to the historical approach. The authors have reviewed personal experience and literature. There is a good summary and the reliability of the data for the purpose of administration. The language throughout is brief. Nevertheless the book is an excellent source for those who wish to gain a rapid impression of cerebral changes with one glance. Thus the book is a fine addition rather to the present as a first reference and source of further reading in the original literature. It should also prove a valuable basis of reference for students and practitioners. The volume is particularly the reproduction of the photographic is excellent. The binding is bound stand up to the heavy and constant use the book will receive from all serious students of the nervous system. The work is the most detailed and authoritative monographs on motor pathology available in the English language.

GORDON MATHIESON, M.B., F.R.C.P.
Montreal, Canada

THEORY AND METHODS OF SCALING. By William S. Jungerson. New York: John Wiley & Sons, Inc., 1958. pp 460. \$9.50.

Psychological scaling methods for the measurement of attributes have been developed in a variety of fields. This book is a most serious endeavor to bring the many methods, but not together. It was prepared for the Committee on Scaling Theory and Methods of the Social Science Research Council and contains material which previously was only available in isolated articles and special book chapters.

In addition to examining established scaling procedures, the author presents subject matter based on his own work in the field. This includes a least-squares solution for the constant sum method, alternative solutions for the categorical judgment model, a multidimensional model for quantitative judgments, and a general normal ogive model for response data.

Scaling procedures have proven to be helpful in studies of discrimination, learning, generalization and personality. Research workers in the various social sciences should profit from a reading of this contribution. Mathematicians and statisticians are given further stimulation to continue their interests with much-needed theoretical frames of reference.

ARTHUR LERNER, Ph.D.,
Los Angeles City College.

IN MEMORIAM

SEYMOUR D. VESTERMARK, M.D.

1902-1959

The outstanding training program of the National Institute of Mental Health stands as a memorial to the late Dr. Seymour D. Vestermark, who, from 1946 to 1959, was Director and then Chief of the Institute's Training Branch. Since the time it was founded in the late 1930s, starting at a time of rapidly increasing demand for professional personnel in the mental health diagnosis and when few centers offered such training, Dr. Vestermark organized a national program for promoting more and better opportunities for training in psychiatric clinical psychology, psychiatric nursing, psychiatric social work; and training for research related to mental health. By providing assistance through grants and professional consultation to help institutions develop and expand training centers, the program has greatly increased and enhanced educational opportunities in psychiatric and other mental health disciplines.

So great was Dr. Vestermark's contribution that he was cited by The American Psychiatric Association, in January 1959, for having "exerted, during his assignment, a greater influence in the field of psychiatric training than any other person."

"For a decade," the citation continued, "Dr. Vestermark has, by virtue of his personality, his sound psychiatric background, his constructive imagination, and his sound judgment in the distribution of public

funds made available for this purpose by the Congress of the United States, greatly increased the number of students training at medical schools in the field of psychiatry and the better development of psychiatric research training. Recognizing the importance of this activity, the Association has elected Dr. Vestermark a corresponding member, and has presented a letter of appreciation of psychiatry with the Association and the basic sciences."

Dr. Vestermark was a full member of the American Board of Psychiatry and a Fellow of The American Psychiatric Association. He also was a member of many professional committees and conferences in psychiatry and in 1948 served as United States Delegate to the International Congress in Neurology in Lugano, Switzerland.

Born in Dallas, Tex., Dr. Vestermark was a graduate of Case College and the Medical School of the University of Iowa and took postgraduate work at the Colorado Psychiatric Hospital in Denver. He was commissioned in the Public Health Service in 1932 and served as Chief of the Neuropsychiatric Service at the Marine Hospital on Ellis Island and as Executive Officer of the U. S. Public Health Service Hospital in Fort Worth, Tex., before going to the National Institute of Mental Health.

Harold P. Halpert
Nat. Inst. of Mental Health

RICHARD BRICKNER, M.D.

1896-1959

As a physician, Richard Brickner conformed to the definition of Robert Louis Stevenson of a good doctor, for "he brought air and cheer into the sickroom, and often enough though not so often as he wished, healing." As a medical scientist, his many contributions to neurological literature were

invariably of high quality. He achieved distinction, however, and I may say great distinction, in two areas. One was in his approach to multiple sclerosis. Greatly disturbed by the black prognosis for the sufferers of this disease, he dedicated himself to the study of its many problems. He

was eclectic in his method of attack. He applied his boundless energy toward this goal, and approached it from every angle. He was largely responsible for the establishment of the Multiple Sclerosis Association. He stimulated research in a hundred laboratories. He literally dragged the disease from the back wards of hospitals for chronic and incurable neurological diseases and pinned it to the stage of a microscope. **If ever a solution to the problem of multiple sclerosis should be found, this will be a superstructure on a foundation which he has helped to build.**

The second area in which Richard Brickner achieved distinction was in the physiology of the frontal lobes. We were sharing an office together when he first became acquainted with a patient who had had both frontal lobes removed along with the tumor which had invaded and partly destroyed them. He immediately recognized the important physiological implication of

such an operation, and spent years studying the neurophysiological and psychological deficits resulting from it. It was undoubtedly his report on this case, which was published in a detailed monograph, that stimulated the invention of bilateral frontal lobotomy by Egaz Moniz, for which he eventually received a Nobel Prize.

His one assay into semi-popular literature took the form of a book entitled *Is Germany Incurable?* While many people took issue with his conclusions and the book aroused a considerable amount of controversy, it served to stimulate a good deal of thinking about the psychology of the German people which permitted the rise of a Hitler.

In all that Brickner did he put his whole heart and soul, and although he was invalided for several years before his death, he maintained an active interest in a dozen problems right up to his last breath.

Leo Davidoff, M.D.,
New York City.

RELATION BETWEEN HISTORY, PERSONALITY AND FAMILY PATTERN AND BEHAVIORAL RESPONSE AFTER FRONTAL LOBE SURGERY¹MILTON GREENBLATT, M.D.²

The lobotomy studies of the psychosurgical period afforded an excellent opportunity to investigate the relationship between behavior after brain damage and a large number of variables related to history, personality, and background.

For the purposes of our discussion, it would be most fortunate if the frontal section produced by the operation were uniform from patient to patient. Unfortunately, this is not so. Even where the surgical intent is the same, and the procedure held, as far as possible, constant, the lesion probably varies considerably. Skulls vary, brains vary anatomically and functional organization—whatever there is of it in the frontal lobes—also varies. A conservative surgeon has stated that with the best planning the plane of the section could easily vary by as much as one centimeter. Clearly this could make a tremendous difference in the pattern of fibers cut and in the ultimate reorganization of personality in response to brain lesion.

In my first discussion I will draw upon a series of cases of chronic psychosis from lobotomy studies carried out between 1943 and 1949 (1). During this period the operative lesion was a full bilateral cut performed *via* a superior opening just anterior to the sagittal suture with all technical procedures under direct visualization (Poppen's technique). A careful analysis of traits or "factors" was done before and after operation. Thirty factors were studied, selected on the basis that each was relatively objective, readily observable, and could be easily rated or quantified. In speaking of the changes, we think of them as changes

"following operation" rather than caused by operation. This seems like reasonable scientific caution, since changes under these circumstances are complexly determined.

One of the most important discoveries of this study was that with almost all factors there appeared a shift in two directions: a group of patients who were "abnormal" in respect to a trait becoming "normal" after operation; and, conversely, a group who were "normal" before operation becoming "abnormal" after operation. Our data are based on 181 patients followed up 1 to 4 years after surgery. In some instances, the abnormal characteristics existing preoperatively disappeared altogether postoperatively with no symptom of this type appearing in any cases for the first time following operation. In other instances, the abnormal symptom receded markedly or disappeared postoperatively in a large percent of the cases but appeared for the first time in a small percent of cases; and in a final group, the shift in the normal direction was more than overbalanced by a shift in the abnormal direction.

Figure 1 illustrates those areas where, in our experience, the most reliable prediction of change in a favorable sense may be made. Virtually no patient developed postoperatively the symptom or trait designated, and a very large proportion of those who had these traits preoperatively were relieved by operation. If this were the sum total of changes produced, certainly lobotomy would be more popular today than it is.

Let us now turn our attention to a group of manifestations that are to a large degree improved by operation but where there is a definite risk of producing an undesired change postoperatively as well.

Figure 2 shows 5 factors in which there is not only expectation of good results, but also a chance that undesirable changes will occur, too. In the case of "Alcoholic Excess," of 6 patients who could be put

¹ Read at the 114th annual meeting of The American Psychiatric Association, San Francisco, Calif., May 12-16, 1958.

² Assistant Superintendent and Director of Research & Laboratories, Massachusetts Mental Health Center (Boston Psychopathic Hospital); and Associate Clinical Professor of Psychiatry, Harvard Medical School, Boston, Mass.

FIGURE 1

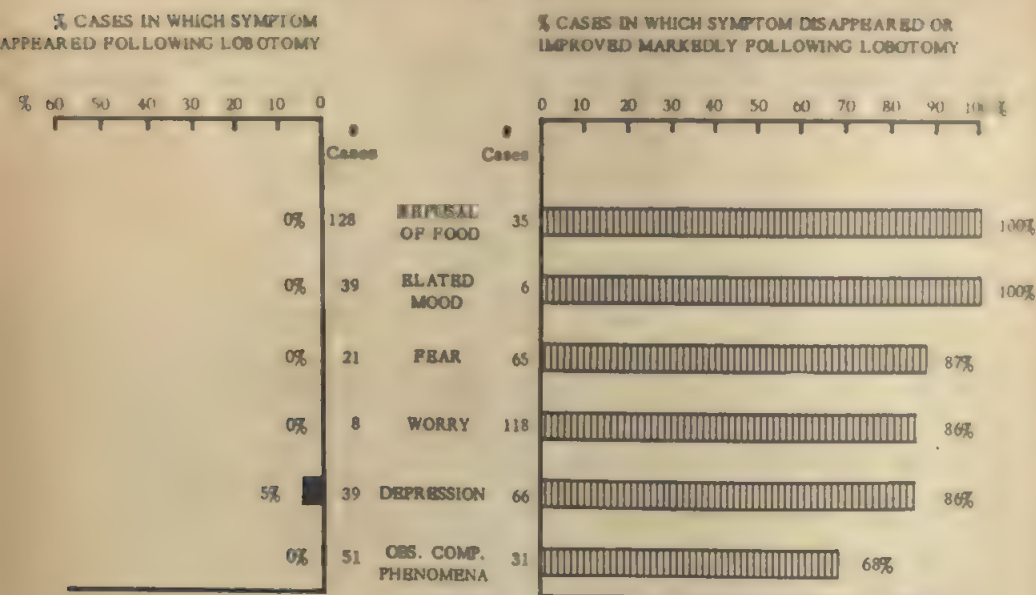
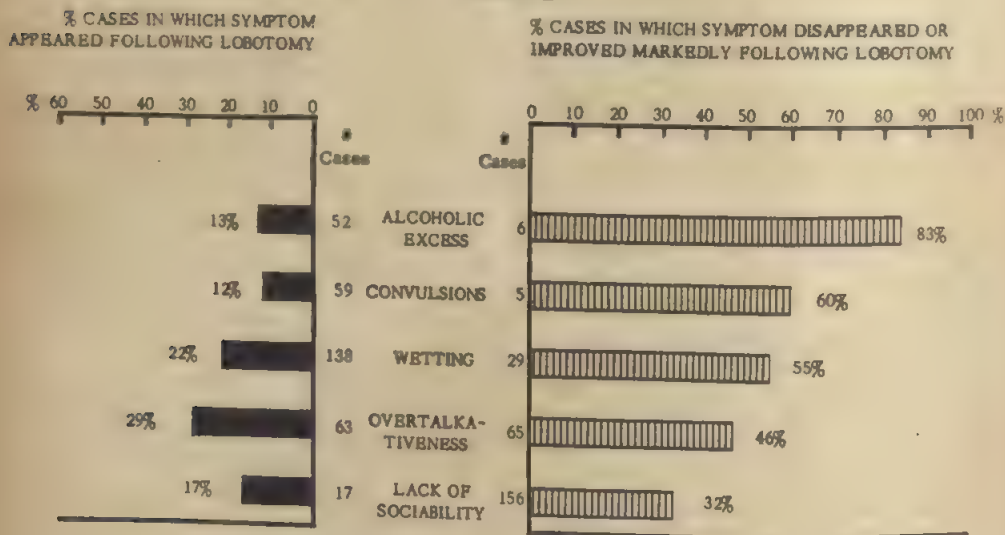


FIGURE 2



in this category preoperatively, 5 were relieved entirely of their alcoholism postoperatively. However, of 52 who were clearly non-indulgent, 7 (13%) increased their consumption significantly postoperatively. In a separate publication(2) we studied in detail the question of alcoholism in a larger series of cases with the following conclusions: 93% of lobotomized patients who returned to the community did

not change their drinking habits. Those who did usually changed markedly, going from one extreme to the other. Five patients (3%) out of 167 non-alcoholics became alcoholic for the first time after lobotomy. Three (25%) out of 12 known alcoholics stopped drinking entirely. Four (33 1/3%) of the 12 drank more after lobotomy than previously; and 5 (41%) were unchanged in their drinking habits.

The social problem of the small group who drank excessively, however, was often severe since they were less tolerant of alcohol, more hostile, insensitive and anti-social.

It is interesting to know that although in this group the risk of convulsions after operation was in the neighborhood of 12%, nevertheless 5 of 6 well-established epileptics were markedly improved in terms of the frequency and severity of seizures. In the former, the convulsions may be understood as at least partly "caused" by brain damage; in the latter, our hypothesis is that convulsions were related to tension and emotional difficulties which were allayed by operation.

With wetting, which has been defined as incontinence (frequent or infrequent, one month or more after operation) some 22% of patients formerly continent became wetters, yet 55% of those who were wetters as part of their psychotic state were relieved of this symptom.

The next 2 items, overtalkativeness, and lack of sociability, reflect lack of social refinement and restraint commonly found in patients after full bilateral operations.

Figure 3 shows 4 areas in which the degree of improvement is overshadowed by the production of undesirable effects. We find that excess appetite, irritability, outspokenness, and deficient insight are more often produced than reduced by operation.

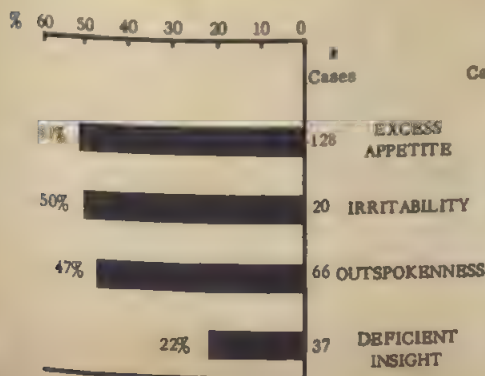
Thus, psychosurgical treatment must be understood in terms of its double potential—to "normalize behavior" and to "abnormalize" behavior. Changes clearly can go in different directions and "undesirable" manifestations in a given dimension may be more pronounced than "desirable" manifestations. This terminology inevitably involves us in the problem of *evaluation* of change, a complex matter that cannot be considered fully here. The issue, however, is so important as to warrant discussion in at least one of its dimensions of consideration.

We have learned that the degree of satisfaction felt as the result of given personality changes following psychosurgery is in large measure a function of family dynamics. For example, some 25 cases were studied where after operation a husband or wife returned to live with the spouse. Many of the changes in family relationship in this context could be seen as subsequent to changes along theoretical "aggression-submission" axis. It was possible to demonstrate that in some instances the husband-wife relationship was rendered more comfortable and, in other instances, less comfortable by a shift in the spouse, either towards the aggressive or towards the submissive end of the continuum.

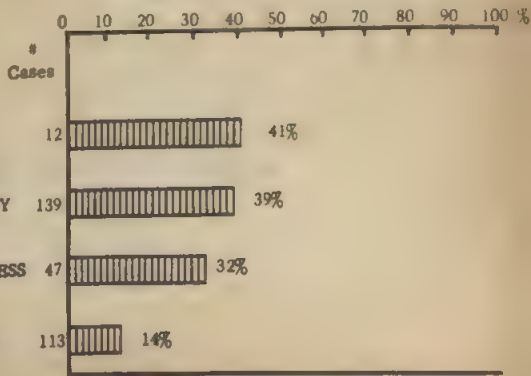
Thus, Mrs. K, a 70-year-old, married, childless woman, had considerable drive, energy and responsibility, while her husband who was unambitious did odd, unskilled jobs

FIGURE 3

% CASES IN WHICH SYMPTOM APPEARED FOLLOWING LOBOTOMY



% CASES IN WHICH SYMPTOM DISAPPEARED OR IMPROVED MARKEDLY FOLLOWING LOBOTOMY



around the house and drank a good deal. Mrs. K met interesting, influential people on her job and received much attention because of her pleasing personality. At home she was the "boss" of the family. However, when her job was terminated during an economic depression, she promptly fell into an agitated state, full of anguish, hand-wringing and pacing. This lasted undiminished for 8 years.

Following operation, all symptoms disappeared but unfortunately the patient took little interest in her appearance, her job or her housework. She seemed content and relaxed and turned over all responsibilities to her husband who in turn was delighted by the change, joyfully accepted the new duties, did not complain of her laziness, and even stopped drinking. The decrease in energy and tension of his wife seemed to give him the feeling of adequacy and masculine dominance he needed.

By contrast, consider the H family in which the wife was almost the twin of Mrs. K—elderly, childless, domineering, energetic and successful before the onset of her illness which was characterized by crying, somatic complaints and agitation. After operation she was lacking in energy or initiative. Her husband complained, "She is hopelessly lazy; I might as well be a bachelor." He grudgingly did the housework, cooking, *etc.*—all the things that Mr. K had enjoyed. He became disgruntled, thin, unhappy; but his wife was cheerful and no longer wept. She seemed content although she expressed some dissatisfaction concerning her lack of energy.

Similar examples could be quoted illustrating how an *increase* in energy and aggressiveness of a partner following operation was welcomed by one spouse or greeted with consternation by another.

In our early series there were some 36 patients who, after operation, returned to live with parents. Although their ages varied from 16 to 45, we think of them as "children" in the family structure. Here we may conceive of changes as taking place along a theoretical axis of "dependence—*independence*." Most children, 33, became more dependent; a few, 3, became more independent. Some children, 7, who had established separate living prior to lobotomy returned to live with their families after operation. They became economically as well as emotionally dependent upon their families which led to more disturbance

than in those instances where patients had formerly lived with parents and after operation returned to the same setting.

Among the instances of increased independence may be mentioned:

One attractive manic-depressive female became engaged, married and moved to another state where she adjusted well.

One passive-submissive son for the first time after operation was able to voice his antagonism to his father to the surprise of his parents, and one day, in typical Hollywood fashion, he made a dramatic exit from the family home in the middle of a blizzard. The patient has been self-supporting and said, "It made a new man out of me." He has never been reconciled with his father.

The third patient lived with the mother who died while she was hospitalized. After trying unsuccessfully to live with her brother, she then made it alone in a rooming house, supporting herself on her own job, even receiving a raise.

Parents of younger children may be considered in the light of how well they reared their offspring after operation. Our best data concern a group of 14 mothers studied by Greta Sharaf (3). Of these, 5 fulfilled the role adequately, 3 partially, and 6 failed completely. These 5 are of special interest apropos the question of the effect of radical brain lesions on maternal behavior. It may be surprising to some that two parents formerly preoccupied with obsessive details, cleanliness, and self-imposed standards so as to be unable to care for children, after operation were more relaxed, affectionate and secure in their relationships. Others, however, did not fare as well.

We see above opposing trends in clinical change as well as varying effects of these clinical changes on family dynamics. Are the changes related to fortuitous and uncontrolled variations in plane or extent of operative section, or are they related to factors existing prior to operative intervention? Data from social interaction studies based on a group of patients studied in 1950-53³ indicate dependence of postoper-

³ These cases received different kinds of operation—bimedial, bilateral, and unilateral frontal sections by the Poppen method.

tive changes in behavior on preoperative characteristics of *social interaction*.

Investigations carried out by J. S. Bockoven(4) on the interaction of patients in an occupational therapy situation both pre- and postoperatively provide us with a clue to social changes for this particular population. First, the overall results.

The results indicate that the statistically average patient increased interaction with his environment after frontal lobe surgery. Specifically, he talked and read more, increased in responsiveness and steadfastness, and carried out more organized actions. He also socialized more with other patients, but showed no change in socialization with hospital personnel; he tended, however, to be more friendly. On the whole the study indicated the average patient became a more active and expressive group member following frontal lobe surgery(5).

Now, what is the relationship between preoperative social behavior and postoperative change? For want of time, I present very briefly the complex findings of Bockoven :

(a) Patients who before operation manifested erratic, constantly shifting, over-productive motor activity, after operation generally moved towards lower energy output and more socially *relevant* activity. However, when the level of energy and activity was extremely low beforehand, there was a release of socially relevant action after operation.

(b) Patients who before operation were characterized as responsive, friendly, or organized in their actions, and inclined to interact with other patients, generally showed great gains in these same characteristics after operation. However, those who were over-responsive, and over-friendly (whose over-sociability was in itself a symptom of a personality disorder) decreased in these manifestations after operation.

(c) The amount of reading after operation bore a reverse relationship to the preoperative tendency to read. Our interpretation is that excessive attention to reading in some instances is a technique of withdrawal from social activity. On the other hand, an increase in reading was noted for those who read very little—in this case,

perhaps the first step in moving toward contact with their environment.

(d) Verbal activity on the whole tended to increase after operation and this in direct relationship to the level before operation.

These complex trends may be crudely summarized by saying that there is, in general, a normalizing tendency. Patients with excessive activity of a non-social type moved towards more socially acceptable behavior as did patients with a marked deficiency in social activity.

Some of the studies from the Massachusetts Mental Health Center have been relevant to the problem of prediction of outcome following surgery. Research-wise this has taken the form of exploring the relationship between specific variables identified before operation and mental status—good, fair, or poor—one year or more after operation. The patient with "good mental status" was one who showed no abnormality in the interview situation and was adjusting satisfactorily in his environment. "Fair mental status" indicated that relatively minor or mild abnormalities in thinking or behavior were present (for example, mild obsessive-compulsive trends or inconstant ideas of reference). "Poor mental status" indicated that the patient had gross defects in mental functioning, such as frank delusions, hallucinations, or deficient memory.

In 1950(1) and again in 1953(6), we published data summarizing our findings on prediction. In the 1950 publication, some 81 factors were correlated with improvement 1 to 4 years after operation, and in 1953 an even larger number of variables were analyzed. I have attempted to boil down the results of both studies and extract only those variables or factors which are of greatest value in prediction. Since the statistical approach in the two studies differed slightly, I am using a fair measure of personal judgment in selecting the variables. Our 1950 publication carries an interesting profile of the characteristics of a theoretical patient most likely to succeed and one least likely to succeed following operation. However, what I present here represents a more refined precipitate of our findings.

The table shows that with respect to

TABLE 1
PREDICTIVE FACTORS FOR

	<u>IMPROVED CASES</u>	<u>UNIMPROVED CASES</u>
<u>ONSET OF ILLNESS</u>	RAPID (ONE MONTH OR LESS)	INSIDIOUS
<u>MANIFESTATIONS DURING ILLNESS</u>	<ol style="list-style-type: none"> 1. AUDITORY HALLUCINATIONS ABSENT 2. INSIGHT PRESENT 3. HIGH "TENSION" 	<ol style="list-style-type: none"> 1. AUDITORY HALLUCINATIONS PRESENT 2. INSIGHT ABSENT 3. LOW "TENSION"
<u>DIAGNOSTIC CATEGORY</u>	PSYCHONEUROSIS--- HYPOCHONDRIASIS OR OBSSSSIVE-COMPULSIVE	DEMENTIA PRAECOX--- CATATONIC OR PARANOID CHRONIC MANIC
<u>SOCIAL BEHAVIOR</u>	<ol style="list-style-type: none"> 1. MORE VERBAL 2. MORE FRIENDLY 	<ol style="list-style-type: none"> 1. LESS VERBAL 2. LESS FRIENDLY

manifestations during illness, *rapid onset* was highly predictive of good outcome as was *absence* of auditory hallucinations, the *presence* of insight and *high tension*.

As for diagnostic category, hypochondriasis and obsessive-compulsive psychoneurosis cases were most likely to improve; however, dementia praecox, catatonic type or paranoid type (essentially chronic), or chronic manic cases, which are probably really variants of schizophrenia, did poorly. In social behavior, those patients who were *more verbal* and *more friendly* tended to improve, while those who were less verbal and less friendly failed to improve generally.

These factors, as we have indicated, were outstandingly helpful in prediction of outcome. Many other factors were helpful in prediction but at a lower level of reliability. For example, if one were married, had children, had obtained a higher education, and if it were possible to identify major precipitating factors in the illness, one was likely to be more helped by operation than if the reverse were true. Patients free of brain damage tended to have better prognosis than those who had brain damage. However, the mere presence of brain damage, if the clinical syndrome

featured tension, *etc.*, did not preclude a good result. A good family, work and community adjustment before operation likewise was of predictive value. The profile thus described in 1950 correlates quite strikingly with the profile recently developed in independent research by Jaco (7, 8) in Texas, and is highly consistent with the findings over many years of our great American pioneer in psychosurgery, Dr. Walter Freeman (9, 10, 11).

It is also interesting to know that relatively good psychological organization, relatively high initiative, good abstraction in psychological tests and an ability to express dissatisfactions in free association were to some extent correlated with good outcome.

In the social sphere, although verbalness and friendliness were the most favorable items, many others at a lower level of predictive value could be mentioned; for instance, ability to express positive and negative affect, or positive orientation to the group versus isolation—in other words, factors that taken together suggest preservation of social extrovertism.

In this communication I do not have time to mention our physiological analyses and the predictive power of straight physio-

logical testing. We were struck by the fact that physiological variables were, on the whole, quite predictive of outcome and feel that this area promises concrete help in our clinical work.

SUMMARY

Studies of many patients before and after lobotomy indicate complex relationships between history, personality and behavioral response after frontal lobe surgery. It has been shown, for example, that postoperative changes may move in either direction along a given parameter—sometimes favorable and sometimes unfavorable. For example, worry and fear were greatly allayed after operation, yet not produced at all by operation. On the other hand, outspokenness existing before operation was removed as a symptom in one-third of the cases after operation, yet in a half of the cases in which it was of no significance preoperatively, outspokenness was *produced* as a postoperative, undesired characteristic.

It is possible to illustrate poignantly how a given change, such as an increase in aggressiveness or dominance, in some instances pleased the family, and in others caused constraints. Conversely, a decrease in aggressiveness or dominance could either please or displease the important persons in the patient's family circle. Social interaction studies showed that there was considerable dependence of postoperative change on preoperative level or type of socialization. In general, the tendency was towards a normalization of behavior: patients who showed excessive activity became more moderate, and patients with deficient activity tended to have a release of this activity after operation.

Concerning the problem of prediction of mental status after operation, it was noted that the primary predictors of good outcome were *rapid onset, high tension, insight present, hallucinations absent, verbalness and friendliness*, and, finally, a diagnosis of psychoneurosis rather than schizophrenia.

The experience suggests that the reactions to severe brain cutting are not to be predicted alone on the basis of the type and amount of brain cut or destroyed, but

in relation to many factors from the background and personality of the patient.

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APPENDIX

DEFINITION OF TERMS

Alcoholic Excess

- a. Not present: a teetotaler, moderate drinker, or alcohol "not a problem."
- b. Present: repeated drunkenness causing interference with satisfactory adjustment.

Convulsions

- a. Absent: no epileptiform seizures.
- b. Present: one or more epileptiform seizures.

Fearfulness

- a. Normal: anxiety or tension consistent with reality threats.
- b. Abnormal: constant anxiety or tension out of proportion to reality threats.

Food Intake

- a. Normal: three meals a day without urging or numerous requests for supplementary food.
- b. Inadequate: requires urging, prodding, or tube feeding.
- c. Excessive: large meals plus insistent requirement of supplementary feedings.

Insight

- a. Normal: patients recognized something wrong with them, that problems were psychological or emotional rather than physical; the patient formulated a chief complaint.
- b. Abnormal: patient did not recognize anything was wrong with him. He did not make a chief complaint.

Irritability

- a. Normal: irritation appropriate to the situation.
- b. Abnormal: frequent annoyance disproportionate to the stimulus or situation.

Mood

- a. Normal: absence of abnormal moods defined below.
- b. Elated: obvious marked euphoria, with accompanying gush of speech, with or without overactivity.
- c. Depressed: subjective admission of unhappy affect; patient looked depressed.

Obsessive-Compulsive Phenomena

- a. Present: phenomena such as hand washing, overmeticulosity, or obtrusive possessing thoughts, such as fear of syphilis or germs.
- b. Absent: judged to be within normal limits.

Sociability

- a. Normal: friendly, outgoing.
- b. Lacking: seclusive, withdrawn, avoided normal contacts.

Talkativeness

- a. Normal: near-average number of interchanges; neither reticence nor pressure of speech.
- b. Under: mute or monosyllabic.
- c. Over: constant chatter; unusually rapid flow of speech.

Wetting

- a. Absent: patient not a bed-wetter, not incontinent one month or more after lobotomy.
- b. Present: patient either frequent or infrequent bed-wetter, or incontinent one

month or more after lobotomy.

Worry

- a. Normal: concern over reality issues proportionate to their importance.
- b. Abnormal: constant distressed, disproportionate concern.

DISCUSSION

E. GARTLY JACO, PH.D. (Galveston, Tex.)

—The social dimension in psychiatric treatment has too often been ignored and Dr. Greenblatt is taking a forward step in presenting evidence relating such social factors as family background and social interaction to outcome of frontal lobe surgery.

There is, however, a point to keep in mind about prognosis, particularly with regard to psychosurgery. The group of patients exhibiting a favorable response to psychosurgery as reported in this paper are likely to respond well also to other forms of treatment. Consequently, until controlled comparisons are made between the various forms of lobotomy and other types of treatment, evaluation of psychosurgery as a mode of treatment more advantageous than less severe forms would be hazardous. This was one of the major reasons why a long-term investigation of patients administered transorbital lobotomy, and other types of somatic and drug therapy was initiated in several of the state mental hospitals in Texas several years ago. In comparing matched groups of cases in 3 of these institutions, the outcome both in and out of the hospital of 3 major forms of somatic treatment were studied. It would not be premature at this time to state that within 3 years of follow-up transorbital lobotomy has been the most successful in keeping patients out of the hospital, with chlorpromazine next best, while electroshock and deep insulin, along with custodial care were the least effective.

However, there is another social dimension that I would suspect is operating and affecting the differential outcome of various forms of psychiatric treatment, particularly as it is investigated in psychiatric research. This is what I would call the "faith-coefficient" operating in psychiatric treatment. There is an inherent risk in psychosurgery in adopting the typically "detached" attitude of the surgeon's relationship to his patients, and forgetting the therapeutic

aspects of the psychiatrist-patient relationship. Differences and results in treatment research may be due to differences in the degree of faith, that is, the amount of enthusiasm for and belief in the efficacy of the mode of treatment exhibited to the patient by either the therapist or researcher, which the therapist possesses in their modes of treatment, which in turn influences the patient and his belief in the therapeutic abilities of his therapist. One might hypothesize that the more enthusiastic the therapist is about his own modes of treatment, the more successful, in turn, such treatment will be for his patients. I think this is one of the reasons why certain therapists and researchers obtain different results in various forms of treatment than other therapists and researchers having greater skepticism for such treatment.

Consequently, the attitude toward psychosurgery and actually doing something for the patient—the process of preparation for lobotomy of both the patient and his family and other interested and significant members of his social milieu—may explain, in part, why some cases exhibited “abnormal” behavior which was “normal” before the operation, or *vice versa*. We would thus inquire of Dr. Greenblatt as to whether or not the group of patients analyzed in this study voluntarily went into psychosurgery, or were coerced, or simply disinterested. It is likely that the voluntary group would have a better outcome or reaction to psychosurgery than the involuntary groups of patients, particularly if any negativistic attitudes were displayed toward the involuntary group by the treatment staff. To some extent, such may be at least a partial explanation for the worsening of such characteristics as excessive appetite, irritability, outspokenness, and deficient insight in one of the series presented.

In summary, Dr. Greenblatt and his associates are to be congratulated in presenting a new series of dimensions of a social nature that affect the outcome of psychosurgery, an area in considerable need of further research in not only frontal lobe surgery, but every other form of psychiatric treatment. Until such factors as the “faith-coefficient” and other social and cultural dimensions are controlled or at least delineated, differential outcome in psychiatric

research of various modes of therapy will continue to persist in the psychiatric literature. These social intervening variables, therefore, are worthy of inquiry in their own right, as well as in conjunction with improving our knowledge of and skills in psychiatric treatment.

REPLY

Milton Greenblatt, M.D., (Boston, Mass.)

One of our greatest areas of ignorance has to do with the relative efficacy of various forms of treatment in similar case groups. Until definitive studies are done of the type mentioned by Jaco, we will continue to depend on inference and prejudice. Successes are being claimed in chronic cases for all types of therapy used. What we need desperately to know is the spectrum of improvement to be expected with a given therapeutic modality in relation to others; the social and psychological conditions under which the improvement is obtained; the degree to which improvement is maintained versus relapse or regression; and finally, the relative costs of the various treatment methods.

I am personally not surprised to hear that transorbital lobotomy ran ahead of chlorpromazine, electric shock treatment, insulin treatment, and custodial care. Our recent experience is relevant. We studied comparable groups of chronic schizophrenics—one group remaining in a state hospital environment and given tranquilizers, the other group transferred to an active social milieu and given the same drugs. The results indicate that improvement rates are about the same after six months in the two environments, but that patients in the active milieu are more likely to leave the hospital because of social work attention and the use of transitional facilities. The significant feature for our discussion here, however, is that tranquilizer therapy does not appear to give as good results as psychosurgery in our estimation. Unfortunately, this is based on *impression* as we have not run *concurrent* matched or randomized groups with the different modalities. But we are intrigued with Jaco's statements which support our expectations.

I cannot give a satisfactory answer to the question as to whether those who volunteered did better than those who resisted surgery, simply because we kept no systematic data on this point at the time. His criticism is well taken, however, and were we to repeat the studies, we should certainly take this into account. Many of our patients were operated without any particular bones being made about

the operation. Some, to be sure, resisted. Many were so regressed and uncommunicative that their feeling about operation was unknown. Improvements occurred in all classes of individuals, however, but with a major positive correlation in our study between a clinical picture featuring tension, agitation, or what we might call "heightened cerebral excitation" and postoperative improvement.

In recent years we have done a good deal of work on the social components in thera-

peutic management of the mentally ill and have learned to respect the importance of the social milieu or setting as a variable affecting therapeutic outcome. The informal, subtle, or implicit aspects of the environment are especially tricky to identify, but we believe they may have a profound effect on patient care and treatment.

We wish to thank Dr. Jaco for emphasizing these most important aspects of the total problem.

PAVLOVIAN CONTEMPORARY PSYCHIATRY IN THE USSR¹

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Biology lies at the basis of modern medicine. The laws of biology are the foundation stones of the theory and practice of medicine. Man in all his complexity, as the object of medicine, should be dealt with on a humanitarian basis—psychological, sociological, *etc.*

All attempts to create a theoretical basis for medical science *only* on biology or *only* on psychology lead to a vulgar mechanistic system, and finally to an empty idealism.

Psychiatry, like every science, reflects in its development all those general premises of a scientific world outlook that prevail at a given period of history.

Before the beginning of this century, both in the field of neurology and of psychiatry, the views of the physiologists predominated, founded mostly on analytical physiology. These had been elaborated by means of vivisection, that is, by experiments with organs and tissues studied separately without any connection whatever with the higher psychic manifestations, mostly through subjective psychology, *viz.* unscientifically.

In a brief paper it is impossible to dwell at length upon the many attempts in building up new notions of the functions of the higher nervous apparatus governing the relationship between the organism and its environment. At the beginning of our century, efforts were made to found new concepts based on the correlation between psychopathology and pathological brain anatomy (Kleist, Pötzl, Meynert, Wernicke). Among Russian psychiatrists, some propagated this so-called "brain pathology," ignoring the importance of Pavlov's researches on the functions of the higher parts of the brain.

Some Russian psychiatrists, as well as those of other countries, made theoretical use of recent physiological concepts, such as those concerning integration and disin-

tegration; the founder of these concepts was the prominent English physiologist Charles Sherrington. But that theory cannot adequately be adapted to psychiatry, for Sherrington and his followers in Western Europe, as well as in America, did not take into consideration the specific characteristics of the functions of the higher divisions of the central nervous system, nor the evolution of functions in their ascending order, *i.e.* adaptability and mutability, heredity and the individual experiences acquired during the individual's life.

The teachings of the behaviorists could not adequately represent the mechanism of normal brain activity, nor its pathological conditions. Behaviorist psychology defines only the beginning and concluding links in an act. The main intermediary, the central mechanism, remains thus unavailable to scientific investigation. In Lashley's ideas one can detect, however, a vague notion about the equipotentiality of the separate parts of the brain, founded upon a rather rough method of extirpation and upon a subjective point of view.

The brilliant work of Walter Cannon on the emotions, dealing with the role of adrenalin, and the research studies on the hormones, were isolated from general questions of physiology and pathophysiology. Endocrinology having been separated from the study of the organism as a whole, led some endocrinologists and physicians to erroneous inferences about the autonomic roles of separate hormones in the activity of an organism (Selye *et al.*). Hormones when exerting their influence, in our opinion, are still dependent upon the brain apparatus common to man and the other higher animals.

In many other countries the understanding of Pavlov's psychiatry and his research on the conditional reflexes is far from correct. Nor has adequate recognition been given to Pavlov's statement that with that development of the cerebral cortex found only in man, there appeared a higher function, the second signaling system, *i.e.* the

¹ Read at the 114th annual meeting of the American Psychiatric Association, San Francisco, Calif. May 12-16, 1958. Translated by W. Horsley Gantt, M.D., VA Hospital, Perry Point, Md.

speech function—at the basis of thought and of the higher emotions. In my opinion, Pavlov laid the foundation of the materialistic [objective] understanding of psychology. The conditional reflexes, as Pavlov put it in a letter to Pierre Janet, seem to exist for all the organs and tissues. The human organism as a whole and all its parts have their representatives in the cortex of the cerebral hemispheres.

The dynamic integrity of the organism may be regarded as wholly corroborated by practical as well as experimental knowledge. Thus began the foundation of a synthetic physiology.

Permit me now to present a rather brief summary of the Pavlovian School of experimental data and after that some facts applicable to neurology and psychiatry.

Due to his extraordinary gifts of observation and experimental skill, Pavlov, as is known, discovered a new class of reflex phenomena arising in the individual's life, hitherto wholly overlooked in experimental practice, a class vast and important, embracing all the reactions of man and animals beginning with the primitive reflex reaction of salivary secretion to the signals of food, including words. Thus every reflex reaction of the brain is a complicated conditional-unconditional reflex, besides those which are formed on the basis of previously originated conditional reflexes, termed by Ivanov-Smolensky conditional-conditional reflexes. These latter may give no external manifestations, and they are revealed inter-cortically only as a kind of inner speech and those unutterable feelings which are the emotions and "obscure feelings" (Sechenov); they can be connected with the cortico-visceral reactions. The inner cortico-conditional relation is formed by coincidental stimuli in several parts of the cortex and the nearest subcortical centers. According to Pavlov, there occurs a circuit in the cortex of two simultaneously or successively stimulated foci.

At present, by means of electroencephalography, researchers in our country as well as abroad are successful in accurately localising the very area of the circuit of new reflex arcs, in studying the interaction of different points of the cortex as well as of cell groups in separate layers of the cortex and the nearest subcortical struc-

tures, including the formatio reticularis.

In the study of intercortical dynamics should be mentioned the researches of Penfield. Even more sensitive are the super-sensitive electrical responses of the viscera, revealing the exact locus of excitation and inhibition in the subcortex and cortex, as well as the interactions of the cerebral parts. Pavlov had already described the interaction of cortical foci. Thanks to micro-electronics, all these considerations and facts have now been extensively elaborated in the laboratories of Magoun and a number of European researchers (Moruzzi and others). I am hoping that the method of conditional reflexes and electrophysiologic means and devices applied to the study of the dynamics of the cortical processes, will jointly contribute to a deeper insight into the intimate workings of the cerebral nervous elements.

There is now a possibility for utilizing our experimental facts and laboratory observations in the practical work of the neurologists and psychiatrists. The intercortical dynamics in Pavlov's teaching concerning brain function is based on general nervous physiology. As I said before, the conditional reflex arc is formed in the cortex between the afferent centers and the cortical visceral representations. We are not as yet quite sure about the nature of this circuit-mechanism but it is likely to be a summation process arising from repeated stimulations of the same cortical cells and the simultaneous and successive stimulation of the executive effector cells.

When the conditional reflex is elaborated by a definite isolated stimulus, then the excitation extends from the group of cortical cells being immediately stimulated to the neighboring areas due to the irradiation of the excitatory process. During repeated tests the irradiation becomes restricted and the excitatory process is confined to a localised point of the cortex. The restriction of the irradiation-excitation may proceed differently under different conditions, but the chief role is invariably performed by another basic nervous process—the process of inhibition. All the tremendous dynamic system of the cerebral cortex is operated through the interaction of excitation and inhibition. This same interaction forms the basis for the control by the

cortex of all the functions of the living organism. The conditional reflex once formed may exist throughout the life of the organism, or it may on the contrary, disappear. And yet the connection once having taken place, does not completely disappear but is only temporarily suppressed.

Of particular and great importance is the so-called ultramaximal stimulation leading to unconditional inhibition, characteristic of all parts of the nervous system, as opposed to the types of conditional inhibition peculiar only to cortical cells. The ultramaximal or protective inhibition takes place where the stimulation exceeds the working capacity of the given cells. In pathological cells even stimuli of usual strength may evoke an ultramaximal inhibition, which is biologically important for the life of that cell.

Without biological adaptability, all the manifold and harmonious activity of a living organism in all its various interconnections with the external world would be quite impossible.

The cerebral cortex of man and higher animals has the function of reverberating circuits, *i.e.* the function of acquiring, forming, creating new relations between the organism and its environment, the function of developing new life experiences, the function of ontogenetic adaptation.

All these ties between the organism and the environment being strictly determined are secured by the analysis and simultaneous synthesis of that grandiose dynamic system of the billion-cell structure of the cortex, due to the discontinuous flow of stimulation and inhibition, their irradiation and relations of mutual induction.

During the last 20 years together with my numerous and very dear collaborators I have carried out experiments corroborating Pavlov's primary assumptions that it is the cortex that controls all the processes occurring in the human body. Experimental work to that effect, the inferences they led to, and the theoretical formulated conclusions have opened new ways for a study of the normal and pathological functions of the different parts of the nervous system, and for studying the interaction of the subtlest mechanisms of the nervous and humoral factors. We have collected exten-

sive experimental data demonstrating the dominant role of the cortical apparatuses in controlling all the main vital functions. Experimentally we tried to form conditional reflexes through exteroceptors to the activity of the internal organs and the general metabolism. Our colleagues working in clinics were able to observe in their clinical practice, the tremendous role of the cortex in various pathological conditions relating to their emergence, course and recovery. Thus we came to the concept of cortico-visceral physiology and pathology. It appeared that while the cortex affects the internal organs through exteroceptive reflexes, the internal organs of different morphological structure and functional importance, possessing receptor apparatus are themselves, in their own turn, directing signals to the cortex. Thus we managed to elaborate an interoceptor signalization to the cortex. These signals which are formed, on stimulation of mechano-thermo-chemo-osmoreceptors in the visceral receptor fields, enabled us to form interoceptive conditional and unconditional reflexes. The significance of interoceptive signals both normally and pathologically is immense, for the organism is dependent not only upon an appreciation of the external world, but also upon the signals conveyed to the regulatory apparatus, derived from an analysis of processes occurring within the organism itself.

The cortex of the cerebral hemispheres constantly faces two kinds of stimuli: those of the external and those of the internal environment. The wonderful researches on the role of the *formatio reticularis* are shedding a new light upon the tonic conditions, without which the function of such a complicated dynamic system—as that chief organ of the whole organism's structure, the brain, would hardly be possible.

We admit that Pavlov's teaching concerning the higher nervous activity and its application in psychiatry were not at once adopted by our Soviet psychiatrists. Pavlov himself spoke about it in 1934. He said then that his new ideas on the work of the higher parts of the brain would be accepted only slowly by scientists (psychiatrists and neuropathologists), and that difficulty Pavlov explained as a manifestation of some survivals of dualism—that is of

the age-old habit of separating thought from the brain, of dividing the single and integral human organism into two halves, mind and body. A gradual overcoming of that dualistic outlook contributed to a broader application of Pavlov's teaching to the sphere of psychiatry and neurology. Pavlov's theory does away with all possible dualisms, because the psychic activity is treated by him as a higher nervous activity, i.e. as some physiological work of the higher brain, which in principle precludes any contrasting of the psychic and the physiological. Consequently, Pavlov's concept is in its essence one of materialistic monism.

In connection with Pavlov's well known works on schizophrenia, Soviet psychiatrists have made many researches concerning the different forms of schizophrenia (Ivanov-Smolensky, W. P. Protopopov, E. A. Popov). Ivanov-Smolensky in studying the peculiarities of disturbances of the higher nervous activity resulting from catatonia, described two forms of catatonic stupor, one depending upon extensive, and the other upon intensive inhibition. It was he who demonstrated the differences in the higher nervous activity resulting from the catatonic and the paranoiac forms of schizophrenia in different stages of their development and under different conditions of the schizophrenic, and especially in manic-depressives.

A number of research works are devoted to the study of the nervous mechanism of epilepsy and the accompanying pathophysiological alterations of the higher nervous activity (Speransky, A. D., Serebina, and others). One should also mention a series of studies devoted to the pathophysiology of hallucinations and delirium. In our opinion, the most important for psychiatry is Pavlov's concept of "protective inhibition."

Its essence, in brief, may be reduced to the following: if the cortex is affected by some very strong stimuli, there may occur in the cortical nervous cells the so-called trans marginal or ultramaximal inhibition which preserves the cells from exhaustion and destruction. It is this property that Pavlov termed "protective inhibition." The latter may arise in the cells even in reactions to only ordinary stimuli. But they may act not as ordinary, but rather as ultra-

maximal stimuli, owing to a pathological weakening of the nervous system, such as is not infrequently observed in the first stage of the catatonic form of schizophrenia. Such protective inhibition may take place when the organism is subjected to different intoxications. It may be regarded as a physiological measure of the struggle against injurious influences. But if continued for a long time, such an inhibition may itself prove to be pathological, in which case we witness a shift from physiology to pathology.

On the basis of the concept of protective inhibition a further study of the sleep-cure, started by Pavlov, is being carried out.

Pavlov exerted a considerable influence on psychiatry by his teaching concerning the second signalling system of the cortex. One can say without exaggerating that psychic troubles as a rule result from a disturbance of the second signalling system—the system of speech and thinking. Pavlov used to say: "If you haven't got ideas, you are unable to see facts." His ideas of the second signalling system provide the basis for much new work.

Now let me say a few words about further work on Pavlov's types of nervous system—their relation to the strength of excitation and inhibition, their balance and imbalance, mobility and inertia.

When studying the higher nervous activity we systematically resort to the methods of studying conditional reflexes, EEG, and biochemistry—in particular, the analysis of vitamin metabolism in neurotics. By all these various analyses it was proven that in all the forms of neuroses there is a disorder of the internal cortical inhibition, i.e. conditional inhibition, and especially in hysteria.

These data are of vital significance for an understanding of the pathophysiological nature of neuroses in man and their treatment: 1. Treatment with the aid of the so-called (in the USSR) "protective regime," 2. Treatment by means of a protracted sleep, applying minimal doses of soporifics and hypnosis, 3. Training of the inner inhibition, 4. Psychotherapy, hypnotherapy including, 5. Treatment with medicines individually dosed and dependent upon the neurotic type and upon the nature of the disease, 6. Physiotherapy, 7. Medical

physical culture (at the Clinic of Nervous Affections—Prof. Kryshova).

Hypnosis is investigated not only as a phenomenon in itself, but it serves as a method of experimental and physiological analysis of man's higher nervous activity (Physiological Laboratory of Prof. Maiorov), as well as for an analysis of the various hypnotic phases, and the interaction between the first and the second signalling systems.

Pavlov's ideas are gaining ground in the minds of many scientists of other countries. In 1955 there was founded a Pavlovian Society in Baltimore, by Gantt and others.

We do not share Freud's theory of neuroses; it is, in our opinion, devoid of a scientific groundwork. The premise of psychic energy striving for an outlet, and the subdivision of an integrated psyche into 3 parts "Id," "Ego," "Super-Ego" are arbitrary and without scientific confirmation. The dominance of an unrecognizable unconscious in man with his inclinations and instincts is in contradiction to modern neurophysiology and the psychology of man as a social being. Even in the higher animals the acquired conditional reflexes perform an important role. Man's behavior is at the same time almost wholly determined by his social surroundings. According to Freud one of the causes for neurosis is civilisation which restricts instinctive action in man. We hold that certain social environments may be the source of neurosis, not because of restricting instincts, but due to many social contradictions.

One of the main fallacies of Freud's theory is its pansexualism. Far from denying the biologically important significance of the sexual instinct in human life as well as in the origin of several neuroses, we refuse to consider it as the most important factor either in normal life or in pathology. The source of most neuroses is not the mythical Oedipus or the discharge of the suppressed libido, but various external influences, mostly social.

The physiological mechanisms causing neuroses are thoroughly investigated by the Pavlovian school.

Freud's method of psychoanalysis applied to the study of personality is reduced to a sexual interpretation and therefore is tendentious.

The attempts of some researchers, especially in the U. S. A., to combine Freudism with Pavlovian concepts in our opinion lead to no solution whatever. Pavlov himself in general occupied a negative stand to Freud, though he made use of some of Freud's materials to illustrate his own ideas.

Modern psychosomatic medical theory, having enjoyed a particular development in the U. S. A., rests on Freudism and its psychoanalysis and pansexualism. The psychosomatic theory explains the origin of somatic diseases by psychic causes. The cortico-visceral theory also regards the disturbances in the higher nervous activity as a source of a number of somatic diseases. But notwithstanding this seeming likeness, the two theories are directly opposite, the cortico-visceral theory being based on materialistic monism. The organism is an indivisible and integral system, where the cerebral cortex is connected with the internal organs, but the organs are also closely related to their surroundings. The psychosomatic theory is a dualistic one, where the mind is divorced from the body and is only able somehow to affect the latter. The adherents of that theory consider the psychic causes of disease as the unconscious sources of actions and the instincts. Different internal, dermatological and even surgical diseases including traumatic ones, they consider as channels for escape of the unconscious psychic energy.

The psychosomatic theory is widespread in American psychiatry whereas in the USSR it has no place. This is to be explained by our different approaches. In order to attain a common scientific language we should not have to discuss terminology, but we should exert our efforts to a clear understanding of the theoretical foundations of medical science in general and in psychiatry in particular.

An important problem for physiology is collaboration with clinicians. In concluding my talk, I should like to express my desire—that there may be established a friendly working contact with American colleagues, as well as with the scientists of all countries. This would be the best guarantee of the development of that human science, viz. medicine, which strives to preserve the health and prolongation of a happy and peaceful life.

THE SIGNIFICANT VARIABLES IN PSYCHOPHARMACEUTIC RESEARCH

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The literature describing the effects of tranquilizing drugs has reached enormous proportions in recent years(1). Few developments in the history of psychiatry have aroused so much controversy(2) or stimulated so many investigations. Most of the early research gave an unduly optimistic picture of the drugs' efficacy because of inadequate experimental controls and inappropriate procedures(3). Recent studies have shown considerably more methodological sophistication and have placed the value of chemotherapy in proper perspective. It is no longer unusual to find several appropriate control groups, double-blind administrations with placebo, tests of statistical significance, and reliable and quantifiable behavioral measures used in many studies.

Only recently has there been a corresponding increase in our conceptual or theoretical precision to keep pace with this increase in methodological precision(4). Although current studies are now more carefully designed and executed, many significant variables that may influence the drug response still remain uninvestigated and, in some cases, unknown. Undoubtedly the main reason for this situation is the large number of variables relevant to any given problem in chemotherapy research and the difficulties involved in their management. If we intend to gain any valid knowledge of drug effects however, we cannot avoid dealing with these complex forces. By over-simplifying for the purpose of experimentation, we always run the risk of neglecting important influences that will make generalizations beyond the experimental setting impossible. Only by studying many of the important variables—and their various permutations and combinations—can we ever hope to approximate in our research endeavors the complexity of human functioning found in real life.

SIGNIFICANT VARIABLES

A person's response to medication is in-

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fluenced by the interaction of 3 major classes of variables, namely, drug, situation, and person. All behavior studied in drug experiments, whether measured by rating scales, objective or projective tests, controlled observations, clinical impressions, *etc.*, is some complex function of these 3 variables operating simultaneously upon the patient. Although this conception is generally accepted at a theoretical level (4), it has been frequently ignored when undertaking specific studies. Most investigators have studied only the influence of drug variables and tacitly assumed an invariant response to its pharmacological properties by all people in all places. Fewer investigators have focused on the situation factors that bring about a particular drug effect and, most neglected of all, have been the person variables that determine the uniqueness of each individual's response to the drug. No one has yet attempted to study the effect of all 3 variables within the framework of a single investigation.

The purpose of this paper will be to discuss each of these 3 major categories of variables and to cite illustrative studies of each. An attempt will also be made to outline a methodology whereby all 3 may be investigated simultaneously to determine their joint effect.

DRUG VARIABLES

The overwhelming number of chemotherapy studies are concerned only with the effect of drug variables on behavior. Type of drug, drug combinations, dosage level, and length of administration are the usual dimensions investigated in this category. Situation or person variables are either omitted or presumably controlled by matching groups on several criteria.

In its emphasis on drug variables, the typical chemotherapy study commits the error of oversimplification by assuming that behavior can be isolated from its social context and that the patient is merely a passive recipient of a purely pharmacological agent. It assumes an invariable response

to the drug: all people reacting in the same way, regardless of the situation in which the drug is administered or the person receiving it. In those studies where no consideration is given to situational or personal factors, authors are forced to state that any improvement in behavior is attributable only to the drug. Such a conclusion has been strongly criticized by Rashkis and Smarr: "It is patently impossible to assume that improvement in patients to whom drugs have been administered is due solely to the drugs themselves"(5). However, the majority of experimenters can reach no other conclusion because of the artificial nature of their research designs.

We have to look no further than to the extremely wide variation in drug results to realize that factors other than the drug are exerting an effect. One review of 52 studies showed 34 to 100% improvement under chlorpromazine and 17 to 100% improvement under reserpine(6). Granting the methodological inadequacies of many of these studies, it is clear that the drug alone is contributing only a portion to the total effect and that other factors—equal, and in some cases more important—must be operating to influence behavior.

SITUATION VARIABLES

It has long been recognized that the psycho-social environment in which the patient resides and receives treatment has a determining effect on his behavior. The findings of Stanton and Schwartz(7) that staff harmony and discord may be reflected in patient functioning, the conclusions of Greenblatt, York, and Brown(8) that patients may improve without any formal therapy simply by being in a "therapeutic milieu," and Caudill's recent work(9) on the total hospital atmosphere all support this thesis. It is evident that patients are not treated in a vacuum and that they respond to a variety of subtle forces around them in addition to the specific therapeutic agent under investigation.

Those social forces impinging upon the patient from the research and hospital setting and those psychological influences stemming from the various personnel with whom he comes in contact are the situation

variables that must be considered in psychopharmaceutical research.²

It is necessary to specify the total social situation in which any drug experiment is carried out. No comparisons between separate studies or replications of single studies can be made without a clear description of the research context. A recent report(10) emphasizes this precaution and as a guide to such description lists 19 items, under the general headings of Hospital Structure, Hospital Personnel, and Patient Population, which may have an influence on patient response. Size, location, architectural characteristics of the hospital; number, training, description of personnel; and special characteristics of the patient population are some of the variables considered important in this regard. It is also recommended that "... any alterations in the setting introduced by the investigator or by circumstances after the study was begun" should be clearly specified because of the possible influence they may have on behavior. The importance of this latter point is documented in a study by Wing(11) which used a sociologist as ward observer. He found the observer's presence on the ward crucial enough to bring about an initial improvement in patient behavior, and this improvement was later reversed when the observer was no longer unfamiliar to the patients.

In spite of the multiplicity of significant variables operative in the social setting, only the research unit specifically has received much attention. That improvement in behavior can occur solely by being selected as a subject and by residing on a research ward has been clearly demonstrated by Rashkis and Smarr(5). Forty-eight chronic female schizophrenics were observed on a research unit for 7 months prior to the administration of drugs in order to establish a pre-drug base line. Thirty-nine of these 48 showed improvement without medication due to what the authors term a "milieu effect" and even after 7

² It is recognized that the distinction between social and psychological situation variables is artificial. For example, the psychological attitudes of ward personnel are very closely related to the social philosophy of the hospital. However, the distinction will be made for purposes of exposition and to categorize the several relevant studies concerned with these variables.

months many had not yet stabilized. This finding is an illustration of the "Hawthorne Effect" (12) originally observed in industrial settings over 20 years ago where increased attention, heightened interest, and social stimulation alone were responsible for changes in behavior.

Gerard considers these "milieu effects" of major significance and primarily responsible for the enthusiastic early reports on the effectiveness of tranquilizers:

I think it has been demonstrated sufficiently that, at least in the earlier stages of drug testing, those hospitals which were reported to get the greatest change with the introduction of tranquilizers were the ones that had almost a completely custodial attitude. Prior to the drug experiments, the patients had been pretty much neglected; now they were given attention as well as a drug (13).

A comprehensive study now under way is attempting to assess directly the influence of the total social setting on drug response (14). The cooperating hospitals are the very large acute and custodial Boston State and Metropolitan State Hospitals and the "130-bed Massachusetts Mental Health Center which is an active treatment hospital with a multi-discipline approach to therapy and rehabilitation." The specific aims of the study are to determine the differing effectiveness of drug therapy between large state hospitals and a small intensive treatment center. By transferring selected patients from one study hospital to the other, the investigators can see whether social therapy alone is superior to drug therapy alone or whether social and drug therapy together is more beneficial than either one separately.

Recently, some attention has been devoted to the second group of situation variables, *viz.*, the psychological influences stemming from personnel attitudes and feelings. Quite early in the development of the tranquilizers it was noted by the staff of the Michael Reese Hospital that they were not obtaining the same degree of improvement with drug therapy as workers in other hospitals (15). This led them to study the attitudes of their personnel toward drugs as a possible determining factor in their lower improvement rate. After an intensive qualitative analysis of the hospital setting, they con-

cluded that attitudinal factors were indeed important and that contributing to their lack of success was "... the relatively negative attitude of our hospital personnel toward the prescription of drugs as compared with alternative modes of therapy" (15).

A quantitative study by Feldman (16) on the relation of staff attitudes to treatment outcome agrees with the above findings. He found a high relationship between the attitudes toward drugs of 37 physicians and their success with the drugs. Those physicians most enthusiastic about medication and convinced of its value had by far the greatest patient improvement. One investigator, for example, who was completely sold on the merits of tranquilizers had 77% of his patients improve; another who considered drug therapy "contrary to our dynamic concepts" and a waste of time had only 10% improvement. Related findings by Thorpe and Baker (17) have shown that nurses' attitudes toward medication are also of importance and influence their judgments of patient improvement.

In view of these few, but nevertheless highly suggestive, findings that "... there is a significant relationship between the enthusiasm of the investigator and the therapeutic effect of the drugs" (1), it seems evident that more research efforts should be directed at this problem. The typical drug study, which only states that certain physicians, nurses, and aides attended the patients during the course of the study—but says nothing of their beliefs and feelings about drug therapy—seemingly ignores a relevant research variable.³

PERSON VARIABLES

The most neglected area in chemotherapy research has been the relationship between drug effects and the personality of the drug recipient, *i.e.*, the influence of person variables on behavior. While it is a truism that "people are different," apparently many in-

³ Research in this area has been facilitated by the construction of an objective scale to measure attitudes toward tranquilizing drugs by Mason and Sacks (18). Although primarily devised for use with physicians, it can be modified to apply to nurses and aides as well. Attitude scores have shown a significant correlation with actual use of drugs by physicians and are now being correlated with several measures of patient improvement.

investigators have assumed that (a) these individual differences will balance out in their experimental designs and contribute equally to all groups, or (b) that drugs exert an invariant effect regardless of the personality differences of the people receiving them. The few studies that have concerned themselves with the problem of individual differences show that neither of these assumptions is necessarily true.

The considerable literature on placebo effects (19, 20), although not usually concerned with tranquilizing drugs, nevertheless has relevance here. The several studies by Lasagna, Beecher, and von Felsinger (21, 22, 23) have all demonstrated that "the nature of the subject" is an important determinant of drug effects. It appears that there are discernible personality characteristics which account for a certain portion of the effect of any given drug. One study on the influence of morphine and a placebo on pain reduction showed that 42% reported some relief of pain following the placebo injection. From a psychological test battery, the authors were then able to characterize these "placebo reactors" in terms of some specific personality patterns (24).

Confirming these findings are the investigations of Hill (25) and Kornetsky (26) wherein objective measures of personality functioning were used. In many cases they found that personality differences brought about behavior which minimized and even went contrary to the typical physiological effect of the drug. There were indications that a "general drug sensitivity" factor exists in some people which causes them to react to all drugs. Other subjects not possessing this factor are less affected by drugs. Relatively little is currently known about the personality variables underlying these idiosyncratic reaction patterns. In summarizing his work, Kornetsky is insistent on the importance of person variables in drug research:

The effects of drugs on psychological performance in man are due not only to the specific pharmacological activity of the drug, but also to the specific reactivity of the subject and to an interaction of the two (26).

It is unfortunate that the rarest type of objective chemotherapy experiment is the one that would answer the most important

question facing the psychiatrist: Will this drug benefit this *particular* patient with his unique background, motivation for treatment, personality structure, and symptoms? The few tranquilizer studies that have investigated this problem of individual differences suggest there is a relationship between the nature of the drug recipient and his drug response. Ellsworth and Clark (27) were able to relate improvement under reserpine and chlorpromazine to a patient's variability in pre-drug "palmar sweat ratings" or generalized anxiety level. Kornetsky and Humphries (28) found high correlations between MMPI psychasthenia and depression scores and their patients' subjective and objective behavior changes following the administration of several drugs. Finally, Kelly *et al.* (29) correlated 68 individual personality variables with the behavioral effects of meprobamate and prochlorperazine. Although many of the significant correlations obtained may be due to chance because of the enormous number tested, the investigators still feel that, "Each significant correlation has interest as a potentially fruitful hypothesis for future experimentation" (29).

The final group of studies investigating the determining role of personality are those conducted within a dynamic or psychoanalytic framework. They attempt to explain the divergent chemotherapy results in terms of the individual's psychological perception of the drug and what medication means to him. Epitomizing this approach is the comment by Fernandes that

the effect of the (tranquilizing) drug upon the whole personality is salutary or detrimental, according to the way it is experienced by the patient's ego, and the way it is elaborated and valued by the patient himself (30).

Sarwer-Foner, in a series of related investigations, has similarly emphasized that

The therapeutic effect (of drugs) . . . is due not to the pharmacological action alone, but to the way in which this physiological action psychologically influences the patient's defenses in terms of the patient's total situation (31).

In the course of evaluating 5 different tranquilizers, Sarwer-Foner found clear-cut untoward reactions in about 17% of his

cases. These patients, instead of showing behavioral improvement, developed panic and paranoid reactions, agitation, increased withdrawal, and enhanced anxiety. He offers as hypotheses for these negative reactions the psychological meaning the patient attributed to the physiological effect of the drug. For example, those patients who typically use motor activity as the main defense against unconscious passivity may become threatened and anxious by the drug's restraining action. Similarly, those patients with strong latent homosexual conflicts may interpret the administration of the drug as "an unwelcome assault or seduction" and react adversely to the chemotherapy. Although these studies have been criticized by Bennett(32) for their methodological shortcomings, they stand as significant exploratory works which can furnish hypotheses for more precise experimentation. There is too little known about the relevant personality variables operating in the psychopharmaceutical situation to discount any possible sources of influence in our research designs.

FACTORIAL DESIGN

It has been shown that a patient's response to medication is influenced by the interaction of drug, person, and situation variables. Changes in behavior are due not only to the type and quantity of drug administered but also to the total social setting in which treatment occurs, the feelings and attitudes of personnel attending the patient, and the personality structure of the drug recipient. Studies which investigate only one or two of these influences can furnish only partial answers to our research questions. It is clear that what is needed is a research design that will permit the simultaneous study of several of these variables in a single experiment.

Such a procedure is called a factorial design.⁴ "A factorial design is one in which we have two or more variables each varied in two or more ways and studied in all

possible combinations"(33). In contrast to the traditional approach of holding all but one variable constant, in a factorial design the experimenter deliberately varies as many factors as he is interested in studying. This procedure is more comprehensive than other methods because interactions between variables as well as the main effect of each variable may then be studied. It is also more economical because a wide range of conditions are sampled using fewer subjects and observations than would be required in conducting separate studies for each factor.

In brief, a factorial design can answer more than one question in a single experiment. It can tell us not only that one drug is superior to another, but also under which treatment conditions and for which types of patients this superiority obtains. This latter information is of primary importance in drug experimentation. Edwards and Cronbach stress the necessity of going beyond a simple "A better than B" approach in evaluative research:

It seems obvious at this point that simple comparisons of (Drug A and Drug B) may often be relatively worthless, and that comparisons gain value as the design isolates the specific types of persons and situations for which A is superior(33).

A single factorial experiment could study the relative effect of each of the 3 major classes of variables outlined in this paper. For example, we could investigate within the framework of a single study the changes in behavior produced by Drugs A and B (drug variables) in chronic and acute schizophrenics (person variables) when treatment occurs in custodial and rehabilitative hospitals (situation variables). The several questions asked in this research are each answered by an analysis of all the possible main and interaction effects.⁵ From the wealth of information that could possibly be obtained from

⁴ An excellent account of the research possibilities of factorial design is contained in the article by Edwards and Cronbach(33). Although concerned specifically with psychotherapy research, it is also applicable to chemotherapy research. More technical discussions may be found in McNemar(34), Kogan(35), and Edwards(36).

⁵ Main effects are the ones that occur consistently regardless of variation in any other experimental factors. For example, one drug may be superior to the other irrespective of the types of patients or the hospital setting. Interaction effects are the ones due to a combination of two or more experimental factors. For example, one drug may be superior to the other only when administered to particular types of patients or only when given in a particular hospital setting.

such a study, the basic advantage of a factorial approach is clear: *the more variables systematically investigated, the more comprehensive the information obtained.*

In view of the considerable evidence that changes in behavior are not merely a function of the drug itself, it is surprising that so many studies still neglect or attempt to hold constant all other relevant variables. Instead of excluding these non-drug sources of influence, we should recognize their existence and, by using a factorial approach, actually build them into our research designs. Only in this way can the combined influence on behavior of drug, situation, and person variables ever be ascertained and more valid knowledge of drug effects obtained.

SUMMARY

This paper has reviewed selected studies that indicate the importance of situational and personal factors on a patient's response to drug therapy. A factorial research design has been proposed as the appropriate means of evaluating several of these significant variables in a single experimental study.

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HELLER'S DISEASE AND CHILDHOOD SCHIZOPHRENIA

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The problem of differentiating psychogenic from organic symptoms is often a challenging one, and this applies in particular to the field of child psychiatry. In discussing the severe personality deviations of pre-school children, under the title of "atypical development," Rank(1) stated:

By this term we refer to those severe disturbances in early development which have been variously diagnosed as Heller's disease, childhood psychosis, childhood schizophrenia, autism, or mental defect.

Such indiscriminate grouping of etiologically different conditions can however be misleading both for theoretical and practical reasons.

Since so-called Heller's disease is most apt to be confused with childhood schizophrenia, it is proposed here to delineate the former condition and to illustrate the problem of differential diagnosis from schizophrenia through a clinicopathologic analysis of a series of cases.

Under the designation of dementia infantilis, Theodor Heller(2) described a disorder in 28 children whom he observed and followed between 1905 and 1930. According to Heller, these are children who, without preceding illness, become conspicuous in their third or fourth year of life through symptoms of a character disorder. Whereas they have been placid or lively by nature until that time, they become moody, negativistic, disobedient, often raging without reason, or whining. They tend to be destructive, and many show anxiety states, occasionally of an hallucinatory character. Following these initial symptoms, they rapidly undergo a process of mental regression which leads within a few months to a complete loss of speech and to apparent idiocy. During the regressive period, motor disturbances frequently become evident. The children acquire tic-like movements, they grimace and pose in peculiar positions. Many become inconti-

nent of urine and sometimes also of feces. It becomes necessary to feed them. During all of this, there remains a certain degree of attentiveness, yet they are unresponsive to any approach through remedial education.

Heller was of the opinion that this condition did not belong to the group of schizophrenias. However, according to Kanner(3), it was customary to list Heller's disease among the varieties of infantile schizophrenia until Corberi found in brain biopsies performed on 4 such patients "diffuse lipoid degeneration of the ganglion cells." These findings led to the assumption that the condition represented a cerebral degenerative process akin to Tay Sachs' disease. Since, however, blindness was not a feature of the disorder, it suggested a process similar to that described by Kufs and by Walter as "amaurotic idiocy without amaurosis." Kanner could find no case reports of Heller's disease in the American literature and stated:

I have seen only three unequivocal cases. In one it was possible to obtain specimens of brain tissue through a biopsy done in Dr. Walter Dandy's department. Evidence of widespread cell degeneration, especially in two layers of the cortex, was unmistakable.

He also refers to reports by Kennedy and Hill, and by Jancke, of Heller's disease following pertussis. Kanner emphasized the essentially organic basis of Heller's disease as distinct from the condition of infantile autism which he first described and which he regarded as fundamentally schizophrenic in nature.

CASE REPORTS

The cases to be described consisted of 3 separate pairs of siblings and are therefore considered below under their respective family names.

Family R.—Lynn, a 15-year-old girl, developed normally until the age of 3 years when she began to exhibit increasing difficulty in walking and irregular twisting movements

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of the arms and body. At the age of 6, her speech became slow and indistinct. When she started school, she became a behaviour problem. For example, she would go to the boys' toilet and expose herself, would tell many fantastic tales and her school work was poor.

At the age of 10, she was examined in a pediatric outpatient clinic, at which time she exhibited flight of ideas and inappropriate emotional reactions. There were mild neurologic signs consisting of dysarthria, choreo-athetoid movements of the hands and arms, ataxia on finger to nose and heel to knee tests, a somewhat unsteady broad-based gait, hyperactive deep reflexes and questionable pallor of the temporal half of the left disc. An EEG showed evidence of generalized dysrhythmia. Laboratory tests, including examination of the spinal fluid, were negative. A diagnosis of mild athetoid form of cerebral palsy was made but, because of the prominence of the psychiatric features, she was admitted for further observation to the psychiatric clinic where she remained for approximately a year.

In the hospital, the patient was first described as dishevelled in appearance, preoccupied, varying in mood between unmotivated, mirthless laughter and apparent sadness, and incoherent in her conversation. She appeared to respond to auditory and visual hallucinations, for example she talked about seeing little objects walking around in the air. It was difficult to test her sensorium. Her behaviour was erratic, impulsive and often violent. Psychologic tests led to the conclusion by the psychologist that "from the nature and severity of this girl's personality disturbance, it seems possible that this factor alone could account for the disturbed intellectual functioning." The psychiatrist felt that there were sufficient psychogenic factors in the girl's environment, such as parental discord, to account for an emotional disturbance, quite apart from any organic factors. The final diagnoses were juvenile schizophrenia and athetoid form of cerebral palsy. During the course of her hospitalization, the patient was said to improve inasmuch as she became less destructive, and appeared more responsive. She was taken out of the hospital against advice and remained at home. Her further course was one of steady decline, so that in the last 2 years of her life, she became completely unable to walk or talk. Death occurred at the age of 15.

Roger, younger brother of Lynn, now aged 14 years, was said to be well until about the age of 12, when he began showing tremor of his hands and personality changes. From a quiet good student he became very talkative,

neglectful of his personal appearance and failing in his school work. More recently he has been hallucinating, believing that termites were crawling in his bed and complaining that people were persecuting him and going to hang him. He was afraid to leave his mother's side even for a moment and preferred to remain alone and daydream.

Examination in the pediatric clinic revealed nystagmus, ataxia and athetosis. On the Wechsler-Intelligence scale for children he was awarded a full scale I.Q. of 68 but the psychologist remarked that "the record was not unlike that of a schizophrenic process-confused, perseverative and evidencing residual learning." The results of the Bender-Gestalt test also suggested a psychosis. An EEG was considered as moderately abnormal. Laboratory tests, including examination of the spinal fluid, were negative.

When last seen, the patient was showing signs of further deterioration.

Family E.—Marilyn, a 7-year-old girl had a normal birth and early development. At the age of 3 years, she was said to have been frightened at a Halloween party. The next day she appeared fearful and began nocturnal screaming, which continued unabated for the next 6 weeks. She gradually became more seclusive, negativistic and mute, was unable to adjust in kindergarten, and later developed incontinence of urine and feces. At the age of 5, she was examined in the pediatric clinic. Physical examination was negative and there was no mention of any neurologic abnormalities. The psychologist described her as showing "essentially marked instability in her emotional reactions, varying between lethargy, unmotivated laughing and crying, and between mutism and outbursts of unintelligible words and songs." She was awarded an I.Q. of 33, on the Kuhlmann-Stanford and of 47 on the social maturity test and was committed to a hospital for the mentally retarded where she continued to deteriorate until her death at the age of 7.

JoAnn, younger sister of Marilyn, developed normally until the age of 5, when she began to exhibit awkwardness, speech defect, spells of trembling and retardation in her school work. When examined in the pediatric clinic at the age of 7, she showed ataxia, dysarthria, mental regression and EEG evidence of paroxysmal dysrhythmia. She continued to deteriorate and, by the age of 9, her I.Q. was estimated at 55 and a few months later at 30. The further outcome of her case is at present unknown.

POSTMORTEM FINDINGS

The significant pathologic findings in the two patients who died were limited to the central nervous system. In each case there was widespread disease of the neurons, from the cerebral cortex to the spinal cord. The changes consisted of ballooning of the nerve cells, their dendrites and axons, as a result of deposits of a lipid material. This consisted of granules which stained poorly with the scarlet red method for neutral fat but positively with the Nile blue sulfate method, for fatty acids and other more complex lipids. (Fig. 1a, b, c, d.)

COMMENT

It was obvious that the diagnosis in the above cases was amaurotic family idiocy. In the absence of amaurosis it appeared to be a form of the disease, previously referred to as "amaurotic idiocy without amaurosis." Its onset at the age of 3 years in the two cases that died suggested the Bielschowsky-Jansky or late infantile form of the cerebral lipoidoses. In the experience of the author, such cases are not uncommon, but in the absence of the specific retinal findings, are often misdiagnosed. It is noteworthy that in the still living siblings the correct diagnosis was made only after the autopsy in the two patients who died revealed the true nature of the disease.

Family M.—Sharon, a 13-year-old girl, had a normal birth and early development. When she started school at the age of 6, it was noted that she was slow in comprehension, repeated grades and had to be placed in a special class. At the age of 8, her behaviour became bizarre and impulsive, and she was observed to have "blank spells." When examined at a local hospital, an I.Q. of 62 was determined and diagnoses of mental deficiency and petit mal epilepsy were considered. At the age of 11 she was hospitalized for a year in a children's psychiatric clinic. Some of the examiners characterized her behaviour as autistic with diminished speech, punctuated by irrelevant and bizarre responses, mannerisms, and sudden shifts of mood from fearfulness to apathy. Others described her speech as dysarthric and her movements as choreiform. The psychologist concluded that she was showing "classical schizophrenic signs with perseveration of movement, speech and ideation, tics, grimaces and mannerisms, clinging physically to adults with increased motility and reduced verbaliza-

tion." An EEG disclosed a slow disorganized record with evidence of generalized paroxysmal dysrhythmia. Her final diagnosis was established as childhood schizophrenia with catatonic features. She continued to deteriorate and was transferred to a State hospital for the mentally retarded where her condition was diagnosed as degenerative chorea. She died there at the age of 13 years.

Ronald, aged 11 years, younger brother of Sharon, developed normally until about the age of 5-6 years. When he started school, he did poorly, was considered emotionally disturbed, requiring placement in a special class. At the age of 8, he was referred to a mental hygiene clinic. There, he was described as hyperactive, fearful, having a short attention span and his I.Q. was determined at 54. He was diagnosed as mental deficiency with schizophrenic reactions. At the age of 10 he was admitted to the same psychiatric clinic as his sister. Like her, he was variously described as excitable, confused and erratic or as undergoing abrupt involuntary choreoathetoid movements. The psychologist felt that "the patient demonstrated signs of deterioration which were either on a schizophrenic or organic basis." The patient was committed to a State hospital where his EEG was described as a slow, disorganized record with a spike and wave activity suggestive of convulsive susceptibility. He died there at the age of 11 years.

POSTMORTEM FINDINGS

The pathologic findings in the two siblings of Family M. disclosed changes in the brain of an unusual type and location. They were degenerative lesions that involved symmetrically and severely the corpus Luysi and to a lesser degree the mammillary body and the mammillo-thalamic tract. In these areas, the neurons and their nerve fibers had virtually disappeared, leaving only a few shrunken nerve cells and fibers behind, accompanied by a dense reactive fibrillary gliosis. (Fig. 2a, b, c, d.)

COMMENT

The lesions in the two cases bore the stamp of a primary degenerative disease because of their absolute restriction to these two nuclear masses and because of their symmetry. This was further confirmed by the identity of the changes in the two siblings indicating the hereditary basis of the disorder. In the experience of the writer, such a disease with pathoanatomic

and organic brain pathology, as presented in the literature from the standpoint of the clinical picture. It is reasonable to assume that the similarity of the clinical picture of the two types of disease could be attributed to the focus in the organic focus. But as is well known, the nucleus is a large part of the extrapyramidal system, disease of which has often been associated with such disturbances of movement as *hysteria*. Whether the hyperkinesia in these two children was one of *hysteria* or *chorea* remains undetermined perhaps because attention was focused on the psychiatric picture and as a result the neurologic status was not carefully evaluated. The clinical manifestations of the lesions in the mammillary bodies are not *hysteria*. However, these may be compared with such other disorders in which the mammillary bodies are primarily affected as for example Korsakoff's syndrome. In all such instances it is possible that disturbances in emotional expression and other psychic functions can be attributed to a disruption in the connections of the limbic system of which the mammillary bodies form a link.

DISCUSSION

The cases reported above illustrate several types of organic brain disease occurring in childhood, in which the clinical manifestations were those of progressive psychologic and neurologic deterioration. As such they closely resembled the cases described by Heller, even though such a diagnosis was not actually made. It is apparent, however, both from the present cases and others from the literature that the designation of Heller's disease is not sufficiently precise, can in fact be misleading and therefore should be abandoned. For not only has it become a waste basket diagnosis for all sorts of organic brain disease but, more important, it has been confused with childhood schizophrenia.

In agreement with Kanner, the aim in diagnosis should be to distinguish between disease entities along etiologic lines. In our cases, the familial occurrence and the post-mortem findings clearly established the hereditary metabolic or degenerative nature of the disease in each of the cases. However, the familial trends and the precise

diagnosis were not established, and yet the children's findings were determined on the basis of a part of the picture.

Regarding the diagnosis of *childhood schizophrenia* one appeared to have been made by either ignoring or undervaluing the role of the organic factors in the total picture. For example, the motor disturbances, such as the choreiform movements, were considered to be tics or mannerisms, and the abnormal EEG findings were not taken into consideration. Instead, the emotional and behavioural disturbances became the focal points of interest. Even when the organic factors were recognized it was felt that the personality disturbances were on a different basis. Their etiology was searched for and discovered in certain traumatizing environmental or psychogenic factors. In the opinion of the writer it does not appear that there was sufficient proof for the latter contention. Rather, the "schizophrenic" symptoms in the cases seemed to be directly related to the brain damage. As already stated previously, Kanner was convinced of such an interpretation of the syndrome of Heller's disease. It should be emphasized that the term *schizophrenia*, when applied to such cases as are here discussed, is misleading since it fails to recognize the specific metabolic nature of the disease in question and consequently directs interpretation of the condition and treatment in a wrong direction.

SUMMARY

1. Six cases of children with organic brain disease, which were clinically diagnosed as childhood schizophrenia, are analyzed clinicopathologically.

2. The diagnosis of Heller's disease or of childhood schizophrenia, often made under such circumstances, is considered respectively inadequate and misleading.

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THE ADMINISTRATION OF BAS, 5-HTP, AND MARSILID TO SCHIZOPHRENIC PATIENTS

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Woolley and Shaw(1, 2) first proposed early in 1954 that a deficiency or excess of serotonin in the brain might be a cause of schizophrenia. To test the hypothesis, Woolley(3, 4) suggested that 5-hydroxytryptophane (5-HTP) the precursor of serotonin, be administered to schizophrenic patients. If serotonin had no relationship to schizophrenia, then the patients should not react. On the other hand, if the disease were caused by a deficiency of serotonin, then 5-HTP should have a therapeutic effect and if the disease were caused by an excess of serotonin, then 5-HTP should intensify the schizophrenic symptoms. 5-HTP was suggested rather than serotonin itself since serotonin does not readily cross the blood-brain barrier, whereas 5-HTP does. We wish to report on the clinical and biochemical effects of 5-HTP administered to 5 chronic schizophrenic patients. At Woolley's suggestion, 1-benzyl-2, 5-dimethylserotonin (BAS) was preadministered in order to protect the patient against the gastrointestinal effects of excess serotonin (4). Two of the patients received Marsilid in addition to the BAS and 5-HTP to inhibit the presumed monoamine oxidase destruction of brain serotonin.²

In the first study, 4 male chronic schizophrenic patients were selected from the research ward of the Worcester State Hospital. The first week served as a control period. During the second and third weeks, each of the patients received orally two 50 mg. tablets of BAS daily. During the fourth and fifth weeks the administration of BAS was continued and the patients

received in addition an intramuscular injection of 15 mg. of 5-HTP twice daily. The sixth week served as a control period.

In the second study, using the same patients but one, the dose of 5-HTP was increased from 30 to 100 mg. a day. One of the patients (BER), was dropped and another male patient (YAN) substituted. The first week served as a control period. During the second, third, fourth and fifth weeks, 50 mg. tablets of BAS were given orally twice daily to each patient. Two of the patients (CAR and AKE) in addition to the BAS received 50 mg. of 5-HTP twice daily, throughout the third, fourth and fifth weeks. The other two patients (BEN and YAN) in addition to the BAS received 50 mg. of 5-HTP, i.m. and 50 mg. of Marsilid, orally, twice daily, throughout the third, fourth and fifth weeks. The sixth week of the study served as a control.

The schizophrenic patients showed no change in behavior; the psychiatric clinical picture was completely negative in all 5 patients. BAS alone, BAS combined with 5-HTP, and BAS and 5-HTP in conjunction with Marsilid were of no therapeutic value. Rudy and coworkers(5) studied 24 moderately disturbed psychotic females; they reported that BAS exerted predominantly a tranquilizing action and that 20 of the patients improved at maximum dose. Woolley (4) reported on 12 schizophrenic patients that had been treated with combined BAS and 5-HTP: he noted that only 3 of them showed an immediate improvement, but this was not sustained. He concluded that this treatment did not alleviate the disease. Our findings agree with those of Woolley.

The administration of Marsilid which may be expected to increase the brain serotonin levels over that expected from the use of BAS and 5-HTP failed to alter the negative clinical picture. While only 5 chronic cases are represented in this study the evidence casts doubt on the hypothesis that too little or too much serotonin *per se* is causally related to schizophrenia.

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Urines were collected systematically throughout the studies at about 10 A.M. after discarding the waking samples. The urines were analyzed for 5-hydroxyindoleacetic acid (5-HIAA) by the colorimetric method of Udenfriend(6) and chromatographed in a two-dimensional system(7), spotting 200 ul. of urine and spraying with Udenfriend's reagent to detect 5-hydroxyindoles and with Ehrlich's reagent to detect other indoles.

The expected increase in urinary excretion of 5-HIAA following the administration of BAS and 5-HTP combined was not observed even at a dosage of 100 mg./day of 5-HTP for 3 weeks (Table 1). Only one of the patients (BER) showed an increase and this accounted for only 40% of the 30 mg. of DL-5-HTP injected (calculated on the basis of the L-form only). The administration of BAS by itself caused no change in the urinary 5-HIAA excretion pattern of the schizophrenic patients. There are two possible explanations for these facts: 1. That schizophrenic patients lack one or more of the necessary enzymes to convert 5-HTP to 5-HIAA and 2. That BAS alone causes a metabolic block. We have presented evidence(8) that the urinary levels of 5-HIAA and the blood levels of serotonin are not significantly different in schizophrenic patients and normal subjects, which would suggest that the enzymes necessary for the conversion of 5-HTP to 5-HIAA are present and operative in schizophrenic patients as well as in normal subjects. It may be concluded that BAS blocks the conversion of 5-HTP to 5-HIAA. The fact that BAS and Marsilid prevented the formation of 5-HIAA from 5-HTP is not surprising

since Marsilid is an inhibitor of monoamine oxidase.

The paper chromatograms clearly showed the presence of the 3 major 5-hydroxyindoles, 5-HIAA, serotonin, and 5-HTP after the administration of 5-HTP to the schizophrenic patients pretreated with BAS. The spots due to serotonin and 5-HTP were not observed in the control period or after the administration of BAS alone. The accumulation of serotonin in the urine strongly suggests that BAS is a monoamine oxidase inhibitor. This is consistent with the findings of Woolley and Edelman(9) that mice treated with BAS showed no increase in urinary 5-HIAA, but that urinary serotonin was markedly increased. It is interesting to note that although both BAS and Marsilid are monoamine oxidase inhibitors, BAS acts as a tranquilizer and Marsilid acts as a psychoenergizer. This suggests that the energizing property of Marsilid may not be a function of its ability to inhibit monoamine oxidase. The accumulation of 5-HTP in the urine may be due to the specificity of the decarboxylase for the L-form with the resultant accumulation of the D-form. The Marsilid and non-Marsilid chromatograms were qualitatively the same with respect to the 5-hydroxyindoles.

An antidiuretic effect was observed in only 2 patients (CAR and BEN), (Table 1) after the administration of 30 mg./day but not after 100 mg./day of 5-HTP. There was as a result a concomitant increase in the concentration of 5-HIAA; the output of 5-HIAA when calculated on a time basis however showed no change due to administered 5-HTP in these 2 patients.

TABLE 1

THE URINARY EXCRETION OF 5-HIAA AFTER INTRAMUSCULAR ADMINISTRATION OF 5-HTP TO MALE CHRONIC SCHIZOPHRENIC PATIENTS PRETREATED WITH 100 MG./DAY OF BAS ADMINISTERED ORALLY

Patient	Administered 5-HTP (mg./day)	Output of 5-HIAA (μg./ml.)			Output of 5-HIAA (μg. hr.)			Output of Urine (ml. hr.)		
		BAS Alone	5-HTP + BAS	Effect ^b of 5-HTP	BAS Alone	5-HTP + BAS	Effect of 5-HTP	BAS Alone	5-HTP + BAS	Effect ^b of 5-HTP
BER	30	8.8	24.6	inc.	162	435	inc.	18.1	21.5	—
CAR	30	8.8	13.4	inc.	638	584	—	77.0	26.8	dec.
	100	5.6	9.5	—	412	462	—	78.3	63.8	—
AKE	30	8.0	7.4	—	420	533	—	68.5	75.1	—
	100	4.2	9.2	—	454	338	—	92.2	41.7	—
BEN	30	8.5	16.4	inc.	317	405	—	39.1	24.8	dec.
	100 ^a	6.5	10.4	—	192	200	—	34.7	20.4	—
YAN	100 ^a	4.0	5.5	—	309	512	—	77.2	59.6	—

^a In addition to 100 mg./day of BAS and 100 mg./day of 5-HTP, these patients received 100 mg./day of Marsilid
^b Where an increase or decrease is indicated, statistical analysis indicates $P < .01$.

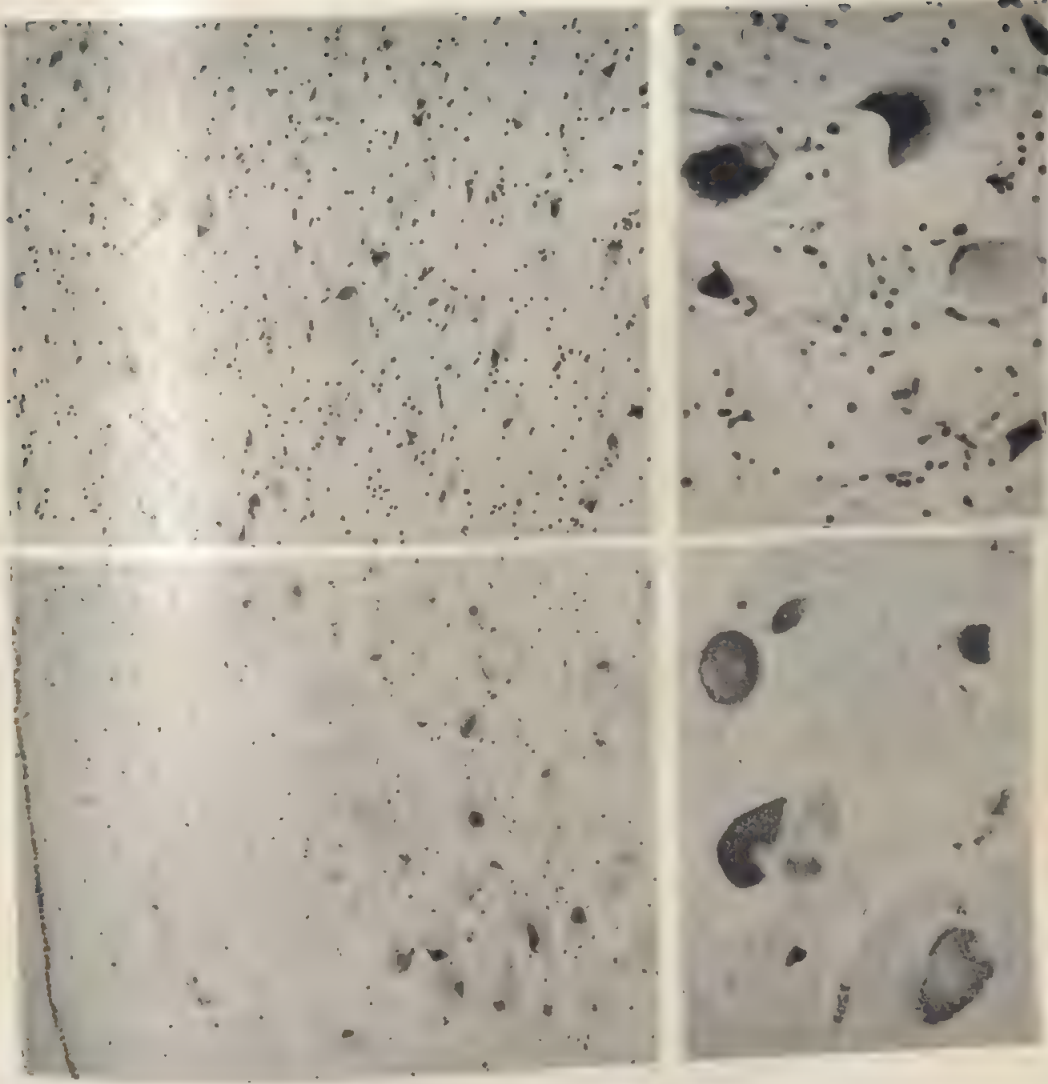


FIG. 1

Ballooning of neurons of (a) corpus Luysi, Nissl stain x 105 and (b) anterior horn cells of spinal cord, Nissl stain x 345, Case L.R. (c) Same changes in paraventricular nucleus, Nissl stain x 105 and (d) deposits within the neurons of granular lipid material staining deep blue with Nile blue sulfate method x 475; Case M.E.

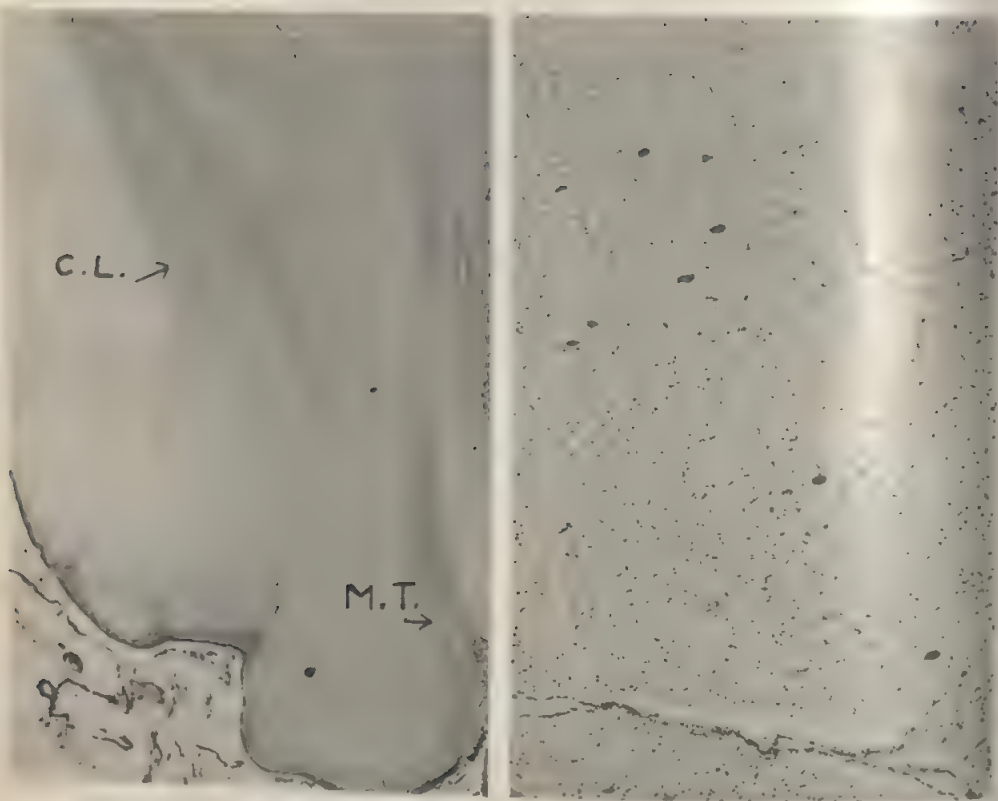


FIG. 2 A AND B

Chronic degeneration as evidenced in (a) by gliosis of corpus Luysi (C.L.) and mammillo-thalamic tract (M.T.), Holzer stain $\times 10$ and in (b) by paucity of neurons and reactive proliferation of glial elements in the corpus Luysi, Nissl stain $\times 100$: Case of R.M.

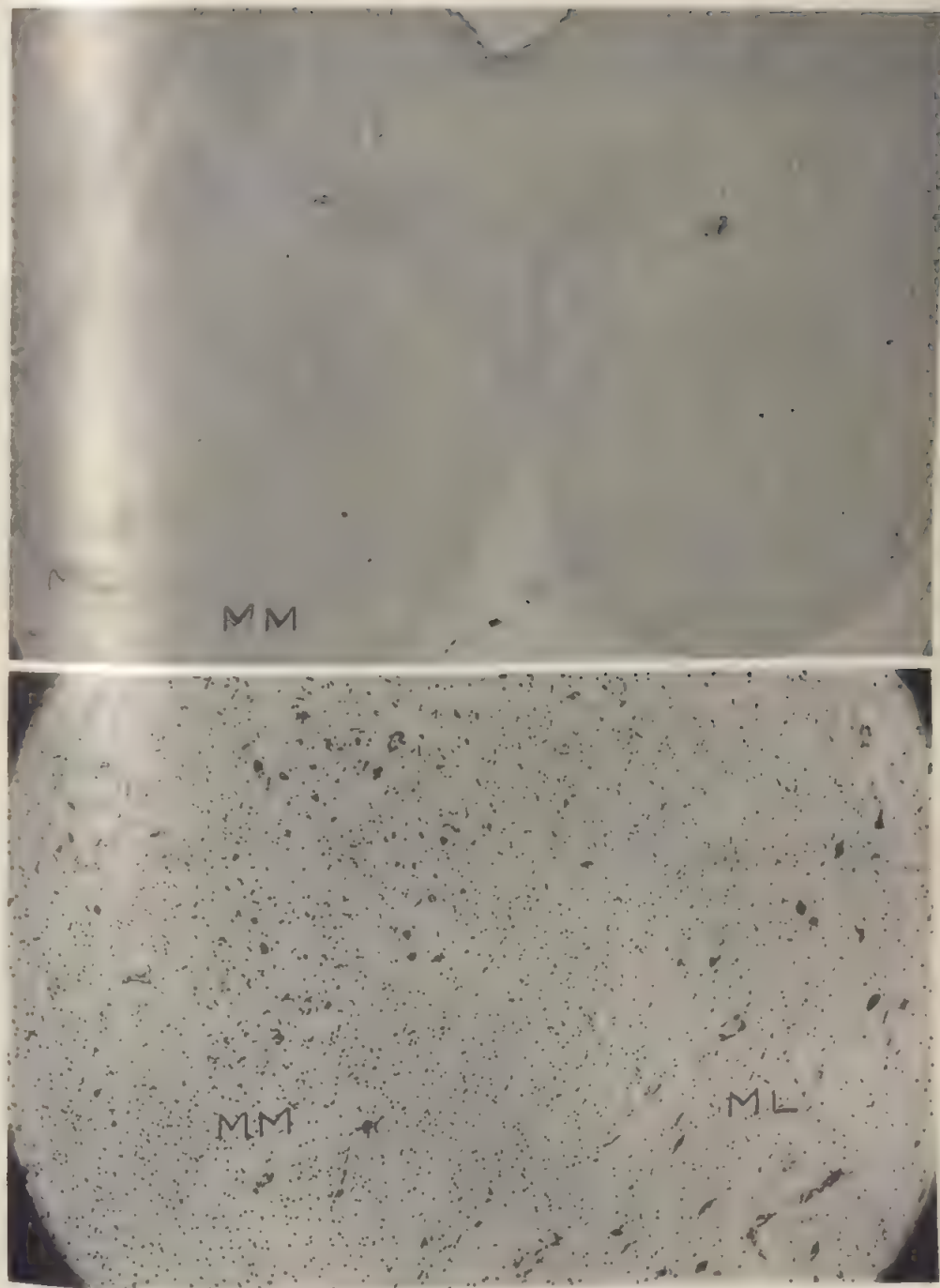


FIG. 2 C AND D

Chronic degeneration, characterized by disappearance of neurons from the medial mammillary nucleus (MM) by contrast with normal appearance of lateral mammillary nucleus (ML) in (c) Nissl stain x 21 and (d) Nissl stain x 110; Case of S.M.

SUMMARY

The administration to 5 chronic schizophrenic patients of BAS alone, of BAS and 5-HTP combined, and of BAS and 5-HTP in conjunction with Marsilid was not therapeutically useful. The fact that the patients did not react to the presumed increase in brain serotonin casts doubt upon the hypothesis that too little or too much serotonin is causally related to schizophrenia.

BAS appears to be a monoamine oxidase inhibitor. The conversion of 5-HTP to 5-HIAA was thus prevented resulting in an accumulation of serotonin in urine.

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THE ROLE OF PREFRONTAL LOBE SURGERY AS A MEANS OF ERADICATING INTRACTABLE ANXIETY

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Let us establish promptly the fact that this study, in contradistinction to most reports on the results of psychosurgery in literally hundreds of patients, concerns itself with the selection, and post-operative results obtained in only 18 patients. However, they are 18 consecutive patients, spread over a period of 10 years and painstakingly selected because their presenting symptoms, their underlying personality traits and their intense degree of intrapsychic distress made us all feel that prefrontal surgery had an excellent chance of success. In no case was surgery decided upon as a "last resort" procedure, nor was it used in any of these patients simply to make them easier to take care of and less of a nursing problem. In the selection of patients for surgery the diagnostic classification was largely ignored and this small group includes nearly every non-organic category except mental deficiency and psychopathy.

The common denominator in all members of this group and the sole reason for surgery, was the presence of severe, long-standing anxiety and agitation, repeatedly resistant to the usual therapeutic approaches and disabling to the point that the patients could no longer carry on their business, marital or social existence. Five of our 18 were patients who had been obviously psychotic and had been hospitalized for many years prior to surgery. They were operated for the same intensely distressful symptoms as the non-psychotic group. All 5 are still hospital residents but the emotionally unbearable tensions for which surgery was done, have been removed in 3 and alleviated in 2. Of the 13 patients who managed to maintain their grip on reality in spite of such disabling factors as uncontrollable gross tremors, intense insomnia

and recourse to heavy barbiturate and alcohol dosage, 12 have left the hospital and have been able to resume their normal existence with no further hospitalization or treatment indicated, for periods ranging from 6 months to 8 years, with the post-operative followup averaging 4 years.

This series of consecutive cases is taken from the files of a small, private mental hospital where maximum individual attention can be given to each case. The patient census is seldom over 40, and with 3 full-time psychiatrists, it is obvious that one will have the great advantage of scores of hours spent at individual interviews. It is believed that the success of this series has been largely due to the resultant careful selection of candidates for surgery and a clear aim established for each one prior to operation. The ability to concentrate on the evaluation and investigation of an individual patient has caused us to decide against surgery in at least 50 patients initially considered for it during the years that this group was selected. In the evaluation of each case the only factors considered in the initial decision are the degree of anxiety and its duration. The history usually shows that this has been present for several years and under ordinary circumstances has been attacked vigorously by various means. Frequently the patients have become dependent upon barbiturates or alcohol in an attempt to alleviate their suffering. Usually large amounts of these agents have produced only slight diminution in their symptoms. In our group of 18, all were treated with ECT either prior to admission, or by ourselves, or both, but it has been our experience that even those reactions primarily characterized by depression will gradually build up a threshold of resistance to repeated series of ECT, while those patients who possess a considerable component of anxiety and agitation tend to do poorly with ECT from the start.

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It must be emphasized that the decision to utilize frontal lobe surgery was reached in every case only after we became convinced that other forms of treatment had failed. The tabulation of individual patients shows that the duration of study and continuous treatment leading up to surgery averaged 14 months, not including the psychotic, chronically hospitalized group. All of them had received adequate electroshock without permanent benefit; some had received entirely too much, considering its repeatedly demonstrated inability to control anxiety in each particular case. All were the recipients of literally scores of hours spent in supportive therapeutic sessions, often during periods of persistent insomnia in the hours after midnight if it appeared that a therapeutic "break-through" could be hoped for at such a time. All were at the same time subject to physiotherapy, hydrotherapy, occupational and planned recreational therapy as well as the usual battery of drugs, both tranquilizing and directly sedative. In the majority of the non-psychotic group we also utilized an average of 8-10 lengthy interviews at night under intravenous amytal, not only to promote abreaction and subsequent sleep but to help in uncovering any strongly hostile, paranoid or antisocial *anlage* that would militate against the use of surgery, due to its tendency to release temporary aggression. If all of these approaches resulted in no consistent relief for the patient and all of the exploratory probing with Rorschach, TAT, Bellevue-Wechsler, amytal and daily clinical contact turned up no serious contraindication, we still set up one last hurdle to overcome before discussing surgical therapy with the patient or relatives. In recognition of the fact that surgery constitutes an irreversible approach to this problem, and to guard against our own increasing enthusiasm because of some very favorable early results, we decided in 1952 to request independent consultation from a source unconnected with Craig House to interview and study the patient separately, arrive at a decision for or against surgery before group conference with us. For maximum benefit to the patient, the consultant should preferably be one whose background, training

and discipline would probably influence him away from surgery. We asked Dr. Lawrence Kubie to consult with us under the above circumstances and he has examined many of the patients since 1952 that are included in this study. Several others do not appear here because we did not always reach unanimous agreement and they were not operated. This process of elimination was our last self-imposed road block in trying to avoid error in selection of candidates and it probably represents one of the main reasons why almost 95% of our small, non-psychotic group have returned home to a normal life and stayed there, the first ones operated now having remained out of hospital 6, 7 and 8 years without the necessity of further therapy.

Throughout the 20 years since Moniz first reported his work in 1936, the one consistent result of frontal lobe surgery seems to have been the reduction or relief of intra-psychic tension. For the most part, lobotomies of whatever depth or extent have been directed at the amelioration of the severely disturbed behavior of the advanced schizophrenic, with the relief of tension largely an interesting but incidental minor note. However, for our purposes it is the most important result of what is now a very modified, less extensive procedure, because in all of these 18 patients the sole aim of surgery was to give the patient relief from severely disabling anxiety and break up the concomitant tension. A 60-year-old man, hospitalized for the first time, who has had only 6 hours sleep in a week, sitting slumped in a chair with his teeth constantly chattering, muscles twitching and eyes dilated, totally unable to concentrate, is just as disabled as a hebephrenic praecox who doesn't even know you are in the room. In fact, he is even more pitiable because only 6 months ago he was an active vice president in a large investment house in New York. He still has the intellectual potential but now the selection of a necktie presents an insoluble problem and he can only pace the room with pointless activity and chattering teeth. Repeated series of ECT, Thorazine and barbiturates couldn't touch him, intravenous amytal at night would give 45 minutes anesthesia, to be followed by re-

sumption of panic. Another male patient, age 46, and with 20 years successful business life behind him, locks himself in his stateroom and slides the key under the door to his wife during a cruise because when on deck there is an uncontrollable impulse to jump overboard. He comes to us after years of repeated hospitalizations, ECT, and insulin coma, and his "solution" for the control of the intense compulsive-obsessive neurosis has been to hole up in various small hotels away from home, to drink himself into an anesthetic state alone for days on end with complete loss of self-respect. These are the types of problems that constitute this list of patients. After a variable number of months or years in spite of all efforts of their own and their physicians, they have arrived at an impasse in which they are chronically miserable, no longer able to support themselves, manage a home or even live up to ordinary daily responsibilities. The referring physician has done his best to maintain an attitude of optimism but he has "tried everything," and eventually recommends another hospitalization and probably more electroshock because he is well aware that the patient's gradual disintegration of personality, coupled with a growing aura of quiet desperation, has all the necessary ingredients for self-destruction. All of these patients in the Acute Group, without exception, had very seriously considered suicide at some point in the progress of their illness as the only remaining escape from the torment of uncontrollable anxiety, agitation and fear. The possibility that surgery might offer a reasonable and safe solution of this dilemma almost never occurred to the harassed referring physician for the simple reason that the great majority of physicians, including our own specialty, have written off frontal lobe surgery as a therapeutic weapon for any illness short of chronic major psychosis. The type of patients necessarily selected from the big state hospitals for the early work in this field and the emotional flattening resulting from the wide, deep and extensive cuts originally employed, have set up a mental image of the lobotomized patient that it will take many years to erase, through current surgical progress and perhaps studies such

as this. It is significant of the general attitude that only one paper on frontal lobe surgery was scheduled at San Francisco for last year's APA meeting. Of this group of 13 who eventually came to either topectomy or pre-coronal leucotomy, 11 came to us with the expressed hope on the part of the referring physician that by the act of hospitalization and the further use of electroshock and tranquilizers we could somehow hold the line against progressive disintegration and self-destruction, surgery not even being considered. The remaining 2 patients were sent in specifically to determine the potential value of leucotomy for them as individuals. This proportion reflects the attitude of most psychiatrists.

In the non-psychotic group there are certain criteria that must be met by the patient. The first and most important of these is the history of an adequate pre-morbid personality. There must be evidence that the patient was able to live constructively with his neurosis and make an acceptable emotional adjustment before the intractable anxiety and agitation began to tear down his defences. We know definitely that topectomy and pre-coronal leucotomy will remove the anxiety but if there has never been a solid level to which to return it is doubtful if surgery is justified. Second, if extensive clinical and psychological investigation indicates an appreciable tendency toward paranoid formulations, or the possible release of aggressive and destructive behavior we have not risked surgery except in one patient. Admittedly, this restriction may have been too conservative, since in Great Britain there are now upwards of 20,000 post-operative leucotomies, and investigators of the stature of Sargant and Maclay have expressed the opinion that this danger is probably overestimated, particularly in the less extensive undercutting utilized here(9). A third important consideration to evaluate before surgery is the probable emotional atmosphere to which the patient will return after hospitalization. The attitude of the patient's spouse is particularly crucial since marital discord can occur when the returned patient, demonstrating much less dependency than during the months or years prior to surgery, threatens

the security of an authoritarian or immature spouse. In this small group we have had one divorce, another threatened divorce and a third situation, wherein the patient, freed of anxiety but showing no other personality change, had to "take over" as head of the family when her husband could no longer dominate her and himself retreated into a regressive neurotic pattern of behavior.

The importance of frequent educational contact with families is one of the reasons why we have practically demanded that patients remain in the hospital for at least 60 days after surgery. Of more direct importance to the patient is the fact that this period is felt to be very crucial to the eventual outcome. The convalescent weeks are divided roughly into thirds. During the first 3 weeks the patient will be quite slothful, will sleep a good deal to make up for lost sleep and exhaustion, will be hedonistic, humorous, probably sarcastic and quite tactless in conversation and relationships with others. The only limitations imposed are that he must stay on the hospital grounds, must have a nurse with him at all times and not engage in any activity such as heavy exercise or swimming that might endanger his post-operative physical status. He eats and sleeps when he pleases and is encouraged to behave in any manner he desires, within obvious limitations. After one month the night nurse is removed and pressure is gradually exerted to get him organized into a pattern of regularity in his sleeping, meal hours, hygienic routine, proper selection of clothes and the observation of good general manners and courtesy towards others. Usually this routine is established after about 6 weeks but we have found that if a patient is at home and continues to do as he pleases it may never be established. During the last 2 weeks the patient is usually put on his own responsibility, the day nurse is removed, he begins to go home for week-ends and plans for his future are discussed with him for the first time. Not until the last few days do we discuss his past illness, the reasons for surgery, or attempt to determine changes in his mental content following surgery. In general the patient is more than pleased to concentrate on the present

and future and expresses himself as "well rid of the past." Dilantin is continued for one year after surgery combined with ascorbic acid to prevent gingivitis.

Certain results have appeared so consistently in these patients that we feel they should be noted even though the small number of cases makes any statistical approach valueless.

1. With the surgical removal of pathological states of anxiety and tension there seems to be immediate cessation of the need for barbiturates and alcohol. It was the usual sequence of events that patients who had been unable to sleep at all without heavy sedation, and slept poorly even when heavily sedated, would sleep soundly on the night following operation and thereafter without hypnotics. The same general observation was also true of the daylight hours, wherein prior to surgery these patients kept up a constant pressure to obtain any drug, including alcohol, that would promote peace of mind through suppression of frontal lobe activity. We have not operated in any case to specifically influence this type of addiction but it might have much to offer.

2. We found, as have many others including Freeman, Sargent and Scoville (10), some remarkable somatic changes in those conditions known to be influenced by emotional tension. One patient, age 54, had been hospitalized 4 times for severe, bleeding ulcerative colitis, was maintained on a very restrictive bland diet and was told at her last hospitalization, 2 months before psychiatric admission, that her only chance of recovery was through colectomy. During the first week after topectomy, uninhibited by dietary restrictions she literally gorged herself on fresh corn, cauliflower, high residue salads, celery *etc.* stating in high good humor "even if it kills me it's worth it." She had no unfavorable reaction, has now been eating whatever she wants for 4 years and has had no further diarrhea, bleeding or other symptoms of colitis to present writing. One of us (J. L. P.) has a very similar case in his own series in whom ulcerative colitis was repeatedly demonstrated by sigmoidoscopy prior to leucotomy. She is now about 8 years post-op, has been clinically recovered since surgery

and routine proctoscopic and sigmoidoscopic examination demonstrated the rapid return to normalcy of the intestinal mucosa. Three of these patients, plagued for years with hay fever and asthma in June and September, noted a marked improvement in their allergies. Another patient, a 30-year-old paranoid schizophrenic, had truly emaciated himself and developed active, far advanced tuberculosis through refusal to eat. He had been given a total of 110 electroshock treatments in trying to combat this and on admission he still consistently refused food. Topectomy in this case was definitely a gamble but he has not missed a meal in 5½ years, his tuberculosis is entirely arrested and, although still a schizophrenic he is able to spend increasing numbers of weeks at home because he is greatly improved in health, mood and behavior. Only 3 of our patients were hypertensive but they showed a gratifying initial drop in pressure for several months, thereafter have gradually risen but are still not up to pre-operative levels. Nearly all of the patients seemed to drop years of age in their facial expression and appearance, with the ironing out of lines of fatigue and tension as well as a change of facial expression away from a chronically worried and haggard appearance. This was frequently brought to our attention by the visiting families, or the patients themselves.

3. Apparently no group of patients are as grateful to their physicians as those who have had relief of symptoms through frontal lobe surgery. Ordinary process of follow up seems largely unnecessary with this group because about 90% either write to us regularly, telephone or report back to the hospital from as far away as Texas and Arkansas. Questionnaires always get a total response and several patients have spontaneously volunteered to talk to prospective surgical candidates if they were fearful or hesitant about having surgery done. This was never necessary because once a patient surmounted the initial shock of contemplating brain surgery and could be actually promised relief he usually tried to advance the date of operation stating, "I would rather be dead than the way I am now." We consider this continued friendliness and desire to maintain contact long after leaving

the hospital to be a most gratifying result of the procedure. The well-known habit of the former patient snubbing his psychiatrist in public does not seem to prevail here. Perhaps this pleasant reversal of form has increased our enthusiasm for this therapeutic procedure.

A few brief observations are in order concerning the technical aspects of surgical treatment. They are contributed by our surgical co-author and are based on the follow-up of approximately 500 of his own post-operative cases, inclusive of this small group. Perusal of long-term follow up reports suggests that the surgical placement of frontal lobe lesions is important, whether it be by cortical ablation as in topectomy(3), or by disconnection of the thalamo-hypothalamic frontal white fibers as in lobotomy(4). Both topectomy and lobotomy studies indicate that best results with minimal intellectual or emotional deficit follow bimedial subfrontal operations (5) rather than operations on the lateral or superior aspects of the frontal lobe(8). It has also been established that the quantity of surgical removal or disconnection is significant(6). Too little proves therapeutically ineffective, while too much impairs the functional capacity of the brain. Another factor that must be weighed in gauging the surgical extent of these procedures is the degree of any existing brain pathology that may be encountered at operation, such as atrophy, discoloration, undue firmness of the convolutions, a milky arachnoid membrane or advanced arteriosclerosis(3)(6). Such findings, also noted by others(7) in about half the brains so visualized, may lead one to more conservative surgery than otherwise, since some degree of brain damage already exists. While the microscope fails to indicate the nature of these changes(8), they are grossly sufficiently prominent and prevalent to make one wonder about the possibility of metabolic, biochemical or other organic disease of the brain as the cause of the emotional disturbance in at least some of these cases.

Topectomy, a topical resection of a block of frontal lobe cortex(8), of proven value in its day, has now been discarded because it involves a longer and far more arduous

operative procedure than lobotomy, without achieving superior therapeutic results. In lobotomy, operative fatalities have been reduced from 3% to zero and no longer do urinary or fecal incontinence, post-operative hemorrhage, lasting euphoria or flatness of affect occur unless these conditions existed prior to surgery.

SUMMARY

A series of 18 consecutive patients were selected for frontal lobe surgery over a 10 year period to obtain relief from chronic, intractable anxiety. Of the 13 who were not psychotic, 12 have returned to a well adjusted, independent existence at home without further hospitalization or continuation of therapy. Certain observations based on these case studies have been made, with full realization that generalizations cannot be drawn from 18 cases and that whatever value this study may have is dependent upon intense personal investigation of all relevant factors in a small group of individuals.

CONCLUSIONS

1. Topectomy, or more recently modified leucotomy, is the treatment of choice for severe anxiety states that have proven resistant and intractable. Surgery offers, in our opinion, a far better chance of relief from the intense and disabling symptoms of guilt, self-recrimination, anxiety and the disorganizing effect of repetitive, uncontrollable patterns of obsessive thought than does any other form of therapy presently available.

2. It is not presumed that the operative procedure is in any way curative of the underlying personality disturbance that is creating intensely distressing symptoms but it relieves the suffering of the patient in a manner that appears prompt, predictable and permanent.

3. The procedure is safe. In the hands of a skilled and experienced neuro-surgeon there have been no fatalities and a carefully planned bimedial prefrontal lobotomy appears to carry little risk of rendering a patient worse in any way. In only one of this group of 18 cases has there been any undesirable side-effect. This patient had been actively psychotic and continuously

hospitalized for 18 years, requiring extensive, bilateral removal of tissue by topectomy in order to accomplish the relief of severe somatic delusions. During the 6 years followup she has had 3 grand mal seizures in spite of anticonvulsants but it has been a small price to pay for the relief of symptoms obtained. This complication represents 5.5% of the total series.

4. Based on long term clinical observation and psychological testing after surgery there has been no evidence of intellectual impairment, defects in concentration, retention or memory. In fact, the contrary has been repeatedly noted by patients and families as well as business associates. They report an alertness, organization and ability to concentrate that usually has not been present in that specific patient for months, sometimes years, prior to operation. The patients themselves explain this by the fact that their minds, free of self-recrimination, anxiety and fear, can return to normal function. One male patient, now almost 2 years post-operative, returned to full duty as chief auditor of a large industrial establishment 2 months after operation and is currently writing a highly technical textbook on cost accounting. One of us, (J. L. P.) has a private series of cases exclusive of this group, which consists of 27 men and women who today, 10 years after topectomy or lobotomy operation, are conducting a full and normal life and are responsible for committee work, business mergers *etc.*, so successfully that no one is aware of the fact that brain surgery has been done.

5. Careful selection of cases and prompt surgery before there is any deterioration of personality, or before excessive ECT creates an "electrical leucotomy," have been found to yield the best results.

6. The procedure has at least humanitarian value in providing relief from unbearable tensions in severely psychotic patients suffering from persistent somatic delusions.

7. The possibilities inherent in this safe procedure for the treatment of such conditions as severe ulcerative colitis, anorexia nervosa and even constantly recurrent peptic ulcers have not yet been even superficially explored in this country. Given any

choice, the authors feel that they would much rather undergo both the surgery and the aftermath of pre-coronal leucotomy than colectomy or gastrectomy, to say nothing of retaining an intact gastrointestinal system.

8. In view of the duration of symptomatic relief in these patients it seems reasonable to hope that the results achieved may be permanent.

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TABLE 1
CHRONICALLY ILL—STILL HOSPITALIZED

NAME	Age & Sex	Duration Illness Years	Previous Hospital- izations	E C T	Pre- operative Study	Diagnosis	Disposition	Years Follow- up	Remarks
C. D.	65 Male	20	2	2 series 30 Insulin & metrazol 30	24 mo.	Involutional Agitated depression severe	Still in hospital but agitation and anxiety almost absent	11	Goes home frequently, jovial, excellent sense of humor
P. B.	61 Female	12	2	2 series 18	6 mo.	Psychosis, type undetermined, severe agitation	Remains psychotic but definitely improved in anxiety and agitation	-	First leucotomy insufficient; bitempora done 1952
C. C.	49 Female	18	4	3 series 38 Amytal 12	30 mo.	Schizophrenia, paranoid	Makes excellent adjustment for weeks outside of hospital	-	Surgery done to stop intense agitation due to bizarre somatic delusions Excellent result
W. M.	30 Male	3	5	5 series 110 Insulin Coma 120	4 mo	Schizophrenia, paranoid	Discharged to open service at another hospital. Long visits home	-	Admitted with far advanced bipolar I-B. Relieved of food Wt 86 lbs. Operated to break up rapid downhill course Gained 50 lbs. I-B arrested
S. L.	33 F	7	1	1 series 11	48 mo.	Schizophrenia, hebephrenic	Operated to lessen intense fear due to bizarre visual, auditory & somatic hallucinations	21	Basic illness arrested but much lessened more content, severe agitation eliminated

TABLE 2

Non-Psychotic—Adults (Group P)

NAME	Age & Sex	Duration Illness Years	Previous Hospitalizations	P. C. I	Pre-operative Study	Diagnosis	Prognosis	Post-operative	Remarks
B. W.	55-F	3	1	2 series 26	10 mo.	Agitated depression	Home—full recovery No further treatment	1	1 year post-op. No further treatment
T. E.	36-F	12	3	2 series 13	21 mo.	Compulsive obsessive Severe	Home—full social recovery	1	No further treatment
D. E.	63-M	4	6	3 series 23	5 mo	Agitated depression	Return to full business & social responsibilities	1	Returned to work
E. Y.	56-F	2	3	2 series 25	9 mo	Agitated depression	Returned to normal life	1	No further treatment
E. K.	66-F	3	2	1 series 6	3 mo	Reactive depression marked anxiety	Returned home to manage own business affairs	1	No further treatment
G. D.	47-M	11	4	2 series 23 Insulin 40	3 mo	Compulsive obsessive Severe	Discharged to manage own factory and drill oil wells	1	Went frequently to theatre
F. K.	50-F	22	11	3 series 38	38 mo. repeated hosp.	Manic-depressive, mixed	Home—no further attacks	1	1 year post-op. returned to work
M. H.	54-F	1½	0	2 series 10	3 mo.	Agitated depression	Resumed very active & responsible home life	1	Recovery also from severe manic-depressive
P. T.	33-F	4	2	3 series 46	12 mo.	Manic-depressive. Marked agitation	Levelled off since surgery. No further cyclic attacks	1	Marked improvement but apathetic
J. K.	46-M	1½	4	1 series 16	1½ mo.	Compulsive-obsessive Intense anxiety	Return to full duty as top actuary in large industry	1	Apparently full recovery
C. W.	65-M	7	5	4 series 38	1 mo.	Agitated depression with organic features	Discharged home—very much improved	1	Died of coronary—1 year post-op.
M. E.	65-F	5	3	3 series 20	1 mo	Agitated depression	Discharged—still active & doing well	1	Unusually independent post-op.
N. R.	55-F	6	4	2 series 24	60 mo Outpatient	Agitated depression Intense anxiety	Home to resume full social & domestic duty	1	Abrupt change in personality—no residual anxiety

CRITERIA FOR THE SELECTION OF A SMALL GROUP OF CHRONIC SCHIZOPHRENIC SUBJECTS FOR BIOLOGICAL STUDIES.

Special Reference to Psychological (Family Unit) Studies

SEYMOUR PERLIN, M.D. AND A. RUSSELL LEE, M.D.

A review of the literature reveals little attention to the problem of the selection of schizophrenic subjects for biological studies(1, 2). In the published history of such research, the explicit theory or method underlying patient selection is rarely noted. Further, an analysis of the implied process indicates avoidance of such issues as the feasibility of random sampling, non-purposive sample bias, the range of variation with respect to such irrelevant and complicating conditions as age and hospitalization, and the means by which subjects may be duplicated in a pertinent manner.

A major area of interest of the Laboratory of Clinical Science at the National Institute of Mental Health lies in the application of the biological sciences to the problem of mental disease. A long-range multidisciplinary program of studies in the biological aspects of schizophrenia is currently in progress(3). For this purpose, a limited number of beds are available.

Since any program involving intensive psychological and biological studies will be limited with respect to the number of patients, the theory and process of the selection of the sample assumes considerable importance. So far as we know, no attempt has been made to bias a sample for biological studies in the manner to be presented.

It was felt at the outset that any sample chosen should reduce to a minimum those variables which are not characteristic of, or clearly relevant to, schizophrenia (in order to reduce the likelihood of false positives) and maximize the likelihood of inclusion within the sample of those forms of schizophrenia (if they exist) in which

biological abnormality plays a significant role. Further, appropriate criteria of selection once established could provide a basis for duplication and extension of particular findings in a larger group.³

RESTRICTION OF VARIABLES

This method of screening chronic schizophrenic subjects for biological studies presumes that chronic schizophrenia is a continuing psychophysiological process. (No assumption is made as to the possible modification of causal factors during the course of the disease.)

However, even if schizophrenia reflects a psychophysiological state, the latter may not be manifest except under certain conditions of stress. For example, the schizophrenic may compensate psychophysiological in such a way as to be indistinguishable from normal-controls; on the other hand, the schizophrenic may also decompensate under a stress such as criticism and may only then reveal an aberrant psychophysiological condition.

It is possible that the manifestation of chronic schizophrenia may be caused primarily by such social forces as hospitalization, in contrast to the manifestation of acute schizophrenia which may reflect an underlying physiological disorder. These considerations suggest the alternative and

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perhaps preferable screening of acutely disturbed students or military personnel and also childhood schizophrenics in future biological studies.

Restriction of the following variables is especially important since, under the conditions noted, they may be irrelevant to schizophrenia.

1. *Age*—A number of biological function patterns have been best described for normal subjects between 20 and 35 years of age. This suggests a comparable age range for patient selection. Below 20, biological patterns are apt to show the marked variation characteristic of the adolescent period. The upper limit of age 35 excludes a population in which aging is an important variable.

2. *Sex*—Male patients are preferable for the following reasons: (a) Many more "normal" biological values are already established for males. (b) The psychophysiologic phenomena of menstruation are avoided. (c) Dependable urine collection is more feasible in males.

3. *Race*—The possibility of pertinent and significant racial differences cannot be rejected *a priori*. Since most control studies have been done in white populations, and since the white schizophrenic group is larger and better characterized, purposive selection is easier in this group.

4. *Length of hospitalization*—The period suggested is between 3 and 5 years. On an initial screening, length of hospitalization is thought to be a more meaningful criterion than duration of illness because of the difficulty in evaluating historical data available at the time of a screening procedure. The minimum figure of 3 years hospitalization is in accord with data indicating that once a patient has spent 3 years in a hospital, his chance of being discharged is significantly decreased (4). This means that the group is more likely to be available for long-term biological studies and to fulfill, to a greater degree, those requirements for the diagnosis of schizophrenia based on prognosis. The maximum of 5 years is chosen in an attempt to limit the more extreme effects of long hospitalization. Within such a group, evaluations of psychophysiological compensation or decompensation

may be utilized as criteria for further selection (5, 6).

As noted, the acceptance of these limits implies the need for other samples or comparison groups comprised of acute schizophrenic patients who have not been hospitalized or who have been hospitalized for less than 3 years.

5. *Freedom from overt complicating factors*—Medical evaluation done as part of the screening process must maintain focus on factors related to both patient status and hospitalization which will alter related biological studies. For example, "training status" (7), which reflects the activity or inactivity of the individual should be considered in addition to nutritional status. Individual differences as well as the effects of hospitalization must be evaluated. Data regarding the administration of vitamins and antibiotics should also be noted. Many patients hospitalized for this period of time will have had insulin, electroconvulsive and psychopharmacological therapy. The amount of treatment given and any complications of therapy should be considered in selecting cases.

A DESIGN FOR SELECTION : A BIASED SAMPLE

Concepts of randomness and bias as applied to the selection of schizophrenic subjects.

Random sampling is frequently emphasized in the literature. In many projects, however, the randomness is clearly not within the total population of schizophrenic patients, but rather within a heavily biased subgroup which will vary from study to study. On one level this may represent the bias of a "random cooperative" sample, where cooperation is needed for collection of specimens, etc. Cooperativeness, in turn, may be highly correlated with a chronic versus acute subsample or with a paranoid versus a hebephrenic subsample. Many samples seem especially weighted by cooperative, chronic, paranoid patients.

Frequent biases for the selection of schizophrenic subjects are : patient cooperation, activity level, psychodynamics, subtype, symptoms, level of compensation, ability to have behavior recorded and

potential for a control.⁴ Such stratification results in subgroups within which random sampling can then be done. Our goal is not to sample a chronic schizophrenic population randomly but rather to bias our selection with reference to the biological studies. *An operational framework for considering organic versus environmental factors in schizophrenia and its relevance to the biased sample.*

For purposes of discussion, we may consider schizophrenia as a continuum of disease, at one end of which the etiology is organic and at the other, environmental. Organic and/or environmental factors may be involved in the expression of the disease as well. If schizophrenia consists of multiple entities, however, these same assumptions, for purposes of discussion, would hold for each entity or syndrome. Our purpose here is not to defend one point of view against another, but rather to indicate the consequence of such points of view in our operational approach.

We may examine this approach in terms of each of the following alternative postulates:

1. The primary etiology of schizophrenia is environmental: there are no *relevant* organic factors.

2. There are organic factors, but these are secondary to the environmental. (a.) Such organic factors are necessarily present. (b.) Such organic factors are variably present.

3. The primary etiology of schizophrenia is a single organic factor: there are no *relevant* environmental variables.

4. Organic and environmental factors are simultaneously etiological and relevant.

5. There are multiple entities within the "group of schizophrenias." For each entity 1, 2, 3, or 4 may hold.

These postulates should not be considered as composing in their totality a theoretical model of the etiology of schizophrenia; only those postulates are noted which would basically alter our screening procedure. (Concepts regarding the persistence

or sufficiency of these factors in the expression of schizophrenia may modify but will not be crucial in determining selection strategy.)

If the primary etiology of schizophrenia is environmental and there are no relevant organic factors, (postulate 1), no method of selection will increase the probability of finding significant biological variables. If the primary etiology is a single organic factor and there are no relevant environmental variables, (postulate 3), then the significant defect will be revealed by the appropriate biological test in *any* selection of schizophrenics. Under such circumstances, the randomness and the size of the sample are unimportant. Thus the biasing process, however incorrect in theory or application cannot exclude the desired subjects, i.e., those who would reveal the significant defect.

The necessary or variable aspect of biological findings, secondary to environmental causes (postulate 2) is not distinguished in our working design. Similarly, organic and environmental factors which are simultaneously etiological and relevant (postulate 4) are not distinguished in this approach. Hopefully the number of variable aspects may be reduced by restricting irrelevant variables in selection as well as in the management and evaluation of the experimental population; contributory information may be obtained through the use of ward observations, ratings of affective states, serial testing, etc., and in the concurrent evaluation of both the experimental schizophrenic sample and a contemplated normal-control sample(5).

Our working hypothesis assumes that there are multiple entities within schizophrenia or within the group of schizophrenias, (postulate 5); this is the least restricting assumption for our selection strategy. Only if important organic defects are inconstant, will the selection process affect the probability of their discovery; it is therefore on the basis of this postulate that the present theory of selection has been developed. Following from this, we seek to bias our selection in favor of the biological types of schizophrenia.

Process schizophrenia as the basis of a

⁴ See Perlin, S.: *Geriatrics*, 13: 747, Nov. 1958, for illustrations of non-purposive and purposive bias in the process of selection.

biased sample. One possibility of biasing a patient sample in favor of the biological types of schizophrenics lies in the selection of process schizophrenics. Hustin and Shatsky (9) define process schizophrenia as a psychiatric state "connected with an organic process" and then make reference to Bleuler's statement that process schizophrenia is in that class in which "there is a morbid process in the brain that conditions the psychosis."

The definition of process schizophrenia may also be derived from Kraepelin's original designation of a dementia praecox (10). Nevertheless although this concept is as old as the concept of dementia praecox or schizophrenia, the problem of clarification remains. (We are *not* now considering the so-called schizophrenic reaction which is related to a known organic abnormality, for example a schizophrenic reaction resulting from an epileptic focus.)

Although "process" is often equated with the "organic," there seem to be myriad ways of arriving at this equation which may be relevant to the proposition of bias.

One way would be the "organic by analogy" school. The following summary is from an article entitled "Schizophrenia and Central Nervous System Pathology" by Brackbill and Fine (11).

This study attempted to investigate some of the dimensions of schizophrenia. Three groups of subjects were studied: a group diagnosed as typical process schizophrenia, an atypical or reactive group of schizophrenics, and one with known central nervous system pathology. Rorschach protocols were examined for the incidence of Piotrowski's ten signs of organic involvement. It was found that the organic and process groups could not be distinguished from each other, but both of these groups showed significantly more subjects with at least five signs than did the reactive group. It was suggested that the difficulty in differential diagnosis of some kinds of schizophrenics and organics results from the involvement of central nervous system pathology in process schizophrenia. It is suggested that research findings would be less equivocal in studies of schizophrenics if this possibility were considered in the selection of subjects for investigations of schizophrenia.

Setting aside the question of reliability

of Rorschach diagnoses of organic involvement and of reasoning by analogy (that is, through the intervening variable of the psychological projective-technique test), we must still consider process schizophrenia in determining our selection bias.

Most frequently, process schizophrenia is viewed as a constellation of signs, symptoms and predictions. In such a constellation, the following items are usually considered: 1. The premorbid history and personality. 2. Signs and symptoms. 3. The "Non-Reactive" versus the "Reactive." 4. Implications of psychological tests. 5. Course and prognosis.

In general, the premorbid history is described as schizoid. This is derived from a pattern of behavior in childhood, adolescence and adulthood (12). The question of childhood schizophrenia may be raised. Exacerbation of maladjustment may occur in adolescence. A bizarre difference is usually in evidence. Premorbid performances in schoolwork, family relationships, social and sexual adaptation are said to prognosticate the malignant course and outcome (13). The increasing massiveness of symptoms is often noted. Symptoms usually emphasized include: depersonalization, derealization, pervasive ideas of influence, stereotypy, automatism, negativism, realization of disintegration of personality, etc. The onset is slow, insidious and from all available evidence not related to an acute or extreme stress (non-reactive versus reactive). Rorschach signs of organic involvement are present as are findings indicative of thought disorders. The course is regarded as progressive and deteriorating. Thus, regardless of the qualitative or quantitative aspects of symptoms, early improvement would render the diagnosis of process less tenable. In the general differentiation of process, asthenic and pyknic body types are said to be associated with the poor prognosis. Although there has been no systematic attempt to include a variety of biological test responses in differentiating process, many may be relevant.

It is important to emphasize that each of these items singly or in combination has been variously used as necessary or sufficient for the diagnosis of process schizo-

phrenia. Usually all of these concepts are blended under the definition of process schizophrenia. In our opinion, neither the equation, "process equals organic," nor the very definition of process has been sufficiently clarified for use in patient selection. Nevertheless one or more of the items noted may be used to examine subgroups and/or individuals within our sample. Thus, there should be the opportunity to compare process designations with genetic designations as well as with biochemical measurements.

Catatonic and hebephrenic subtypes as the basis of a biased sample. In such an approach, the assumption is made that one classical subtype is more likely to be biological than another. The evidence may include genetic and biochemical data. For example, Kallmann(14) found that the expectancy of schizophrenia is about twice as high for the children of patients in hebephrenic and catatonic groups (20.7% and 21.6%, respectively) as for those in the simple and paranoid groups (10.4% and 11.6%, respectively). Also according to Kallmann's data, there is a higher incidence of parental schizophrenia among hebephrenic and catatonic patients than among simple or paranoid patients.

Periodic catatonia is thought to epitomize this concept and many investigators consider this type a separate entity. Biological findings which relate to or precede recurrent episodes of illness have been reported(15).

A genetic approach as the basis of a biased sample. Planansky(16) summarizes the results of genetic studies of schizophrenia as follows:

The reported excess (as compared to incidence of schizophrenia in the general population) of the studied psychoses in close relatives of psychotic probands is an indication of a certain degree of genetic predisposition even if the expectancy rates are the result of several modes of heredity and even if some proportion of the cases is independent of any specific genetic determination.

Our strategy then moves one step further. We have noted our assumptions relating to the (inconstant) biological types of schizophrenia. At this point, we seek to define these types in terms of a genetic inheritance.

As indicated in the discussion of biological versus environmental factors, if genetic factors are unimportant, then our selection method may be irrelevant.

What approaches then have provided evidence for a genetic etiology of schizophrenia? And can any of these be utilized to bias our sample?

Twins concordant or discordant as to schizophrenia may be of use. In a number of reports, Luxenburger, 1938(17), Rosanoff, 1934(18), Kallmann 1953(15), Slater, 1953(19), a comparative investigation of concordance in hospital patients reveals that there is a significantly greater concordance in monozygotic pairs. The absolute values of concordance rates advanced by different investigators are of less importance than the marked difference in concordance between the two twin categories.

Are twins useful in obtaining a genetically biased sample? Allen(20) points out that "the relationship between identical twins is unique and despite the coefficient of relationship of 1, disease found in both members of a one-egg pair cannot so safely be attributed to a major hereditary defect as disease found in two ordinary siblings". Monozygotic twins, in addition to having identical genes, also have identical constellations of genes. Since this is so, any phenotypic, biochemical alteration found in such twins might be due not to discrete genetically determined characteristics but, instead, to a characteristic determined by the entire constellation of genes. Such a constellation might not be duplicated by other sets of twins nor by other non-twin schizophrenics. (Tests performed on concordantly schizophrenic identical twins may be nearly equivalent to doing the same test twice on the same individual and, therefore, to halving one's sample. Of course, one member of each monozygotic pair may be used instead.)

Similarity of environment for monozygotic twins has been used to question the emphasis placed on twin studies. One an-

⁵ If instead of a major hereditary defect, a complex genetic etiology were a central hypothesis for our selection, then monozygotic twins concordant as to schizophrenia, could constitute the desired biased sample.

swer to such questioning is the magnitude of the difference of concordance rates between mono- and dizygotic twins. The comparison of identical twins discordant for schizophrenia or else concordant but separated at birth, would permit useful and differential perspectives.

The existence of a schizophrenic gene or constellation of genes has been suggested but not established by analyses of sibships and other family groupings. Geneticists, analysing pooled data on schizophrenia, have been primarily interested in the underlying mode of inheritance, that is, whether of dominant, recessive or an intermediate form. In addition, the concepts of multiple additive factors and low penetrance have been utilized. Further, body build as a modifying influence controlling not only the penetrance of the gene but also phenotypic variation and the degree of malignancy, has been postulated. Several types of inheritance may play a role in the determination of schizophrenic psychoses.

Although twin studies are more widely known, family studies in schizophrenia preceded such studies and are more numerous. Indeed genetic theories originated in the observation of an increased incidence of schizophrenia in close relatives of schizophrenics. Biasing the selection in favor of patients with increased familial incidence seems reasonable.

If schizophrenia is etiologically diverse and includes cases with a simple genetic cause, these are the ones most likely to have underlying gross chemical pathology. In this manner we have thought of biologic in terms of inheritance, and have sought to link inheritance to the biochemical.

In planning the selection of schizophrenic patients for intensive biochemical investigations, it was decided that the widest sampling of genetic cases of the type desired would be achieved if one-fourth of the sample showed a family history suggesting dominance; one-fourth, a history suggesting recessiveness, and one-half, a negative family history. The rationale was that any common genetic type would be likely to occur among the patients with affected close relatives, but that any possible two-factor or semi-lethal dominant

type might be crowded out of the family history groups if a significant percentage of cases of schizophrenia is truly due to a common dominant defect, to polygenes, or to environmental causes. The patients with negative family history would then be more likely to include the uncommon genetic types; even common genetic types of schizophrenia are apt to enter the negative family history group if genetic types have a high incidence. Such patients could, by design, also include any distinct clinical types not found in the first half of the sample (21).

In a small sample, it is possible for our selective criteria to exclude the very group for which selection-bias is intended. Selecting one-half of the sample without (immediate) family history of schizophrenia renders this exclusion less likely. An additional argument for such a procedure is in the consideration of patients in the family history group as particularly disposed by their environment to schizophrenia; if this is so, the patients in the negative family history group may reflect the stronger genetic disposition.⁶

THE APPLICATION OF A GENETIC DESIGN IN CURRENT INVESTIGATIONS AT THE NATIONAL INSTITUTE OF MENTAL HEALTH

The genetic design is based on the presence of schizophrenia *within* the immedi-

⁶ On the other hand, we may also consider the patients in the Negative Family History Group as particularly disposed to schizophrenia by their environmental-learning situation and/or symbiotic, "pseudosupportive," ambivalent or "communicatively incongruent" relationship to a non-psychotic or non-overtly psychotic parent or significant "other." If this is so, the patients in the Family History Group may reflect the stronger genetic disposition. (Although we have indicated our operational assumptions we may conceptualize a series of genetic *and/or* psychogenic continua which may be useful in the study of family units containing a schizophrenic member.) As in the case of twins, individuals or siblings born into one family pattern, genetically or psychogenically defined, but reared from birth in a contrasting pattern or else a family without a schizophrenic member would permit useful and differential perspectives.

Within the group of patients or families selected by this primary mode of biased selection, random sampling may occur or else further purposive selection based on representation or distribution of sociocultural and psychological (personality) variables may be considered. In any case, such additional factors can be evaluated.

ate family of the patient. Even if simple Mendelian inheritance is unlikely, some family patterns of schizophrenia may be considered as more likely to be related to genetic factors than others. Affected relatives may constitute evidence for either recessive or dominant inheritance. Thus, there will not be a necessary correspondence between mode of inheritance and family patterns by means of which the cases are classified.

1. Family History Group: The Dominant Pattern. Typically a dominant pattern would require the presence of schizophrenia in one parent, 50% of the proband's children and 50% of the proband's siblings. Our *minimal* condition is one affected parent.

2. Family History Group: The Recessive Pattern. Typically, a recessive pattern would be fulfilled where neither parent is schizophrenic while 25% of the proband's siblings and a smaller percentage of his children are diagnosed schizophrenic. Our *minimal* condition is neither parent affected but with at least one affected sibling.

Examples will be given shortly of these two patterns.

Additional factors given positive weight in the selection of patients for either group include the presence of a normal sibling, the closeness, genealogically, of schizophrenic relatives and the frequency of schizophrenia in the entire family.⁷

Enviorns for two siblings, although diverse in many aspects will still share certain forces in common; the fact that such enviorns can also produce a normal sibling will be relevant. Appearance of disease in different (maternal, paternal) but related family units provides further evidence of etiology independent of the immediate family setting.

3. Negative Family History Group. Here the minimal requirement is availability of

parents and siblings to rule out presence of schizophrenia within the family unit.

As previously noted, there may be more evidence for genetic inheritance in one subtype of schizophrenia as compared to another. Recognition of the possibility of differences in genetic disposition between subtypes may be used to modify our selection procedure. (The different clinical pictures may reflect a variety of additional circumstances which are required for the expression of genetic factors.) Thus if certain types of schizophrenics are excluded by the familial criteria, restoration should be made of representative subtypes (e.g., simple, hebephrenic) in the Negative Family History Group.

Two examples of the Family History Group, Dominant Pattern, are seen in Figures 1 and 2.

Case 1: The patient (F. A.) is a 30-year-old single, white male hospitalized since April 1948. Diagnosis: chronic schizophrenic reaction, undifferentiated type with hebephrenic features. There has been no response to a variety of therapies.

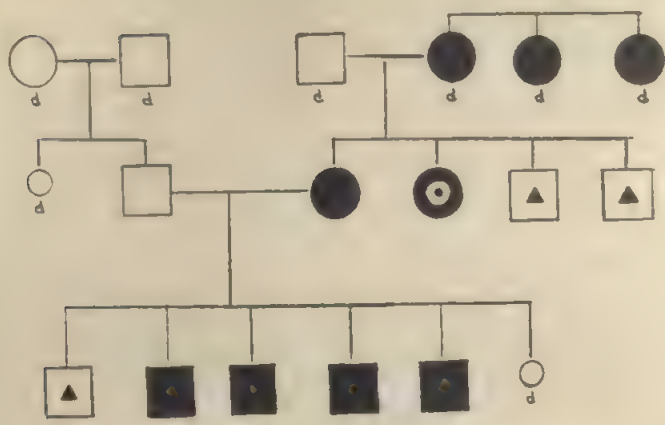
The patient's family history is characterized by the fact that his mother, maternal grandmother, 2 maternal grand-aunts and 3 siblings have been hospitalized for schizophrenia. A maternal aunt has been hospitalized for mental illness, type unknown. Two maternal uncles are alcoholic. The oldest brother may be alcoholic. The mother was a patient at the time of his admission. She had been hospitalized on several occasions during his early life and has been continuously hospitalized since the patient was 13 years of age. He is the fourth of 6 siblings. A sister died in infancy of a "bowel disorder."





Case 2: The patient (Q. M.) is a 29-year-old, white, single male who has been hospitalized almost continuously since November 1950. Diagnosis: schizophrenic reaction, paranoid type with catatonic features. Hallucinations are prominent. There has been little apparent alteration of course with therapy.

Family history reveals that his mother, father, brother and sister have all been diagnosed as schizophrenic during the course of outpatient evaluation and therapy. A maternal uncle described as eccentric has also received psychiatric treatment. Only the patient and the maternal grandmother have been hospitalized for schizophrenia.

⁷ The operationally defined dominant and recessive family patterns, these additional factors and many others will be relevant to criteria for the selection for longitudinal studies based on the expectancy of the appearance of schizophrenia within such families. The sample should also include negative history families and families without a schizophrenic member, for comparison. Thus both psychogenic and genetic hypotheses may be studied.

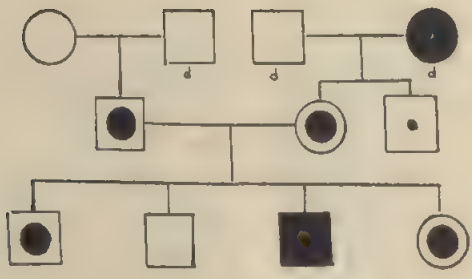
Figure 1. FAMILY HISTORY GROUP - DOMINANT PATTERN (Pa)¹







-  Hospitalized for Schizophrenia
-  Hospitalized for mental illness, type unknown
-  Alcoholism
-  died

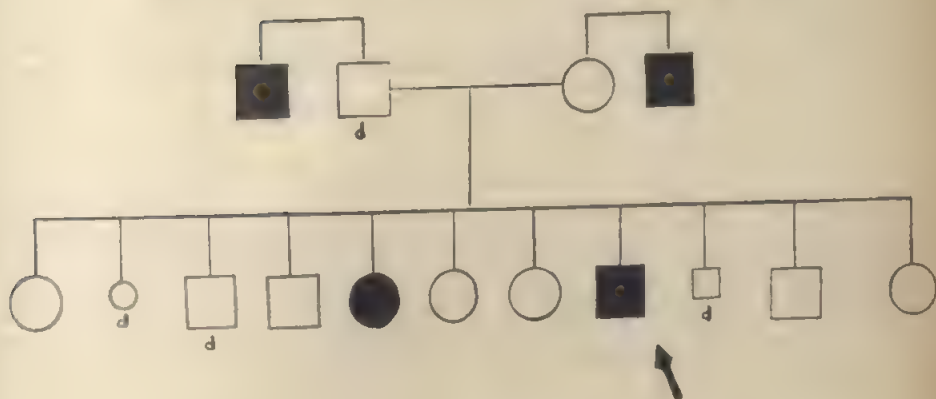
1. Index Case is a 30 year old Undifferentiated Chronic Schizophrenic with Hebephrenic features, hospitalized, 1948

Figure 2. FAMILY HISTORY GROUP - DOMINANT PATTERN (Q.M.)¹



-  Hospitalized for Schizophrenia
-  Non-hospitalized; diagnosis of Schizophrenia by psychiatrist
-  Mental illness, type unknown; psychiatric treatment
-  died

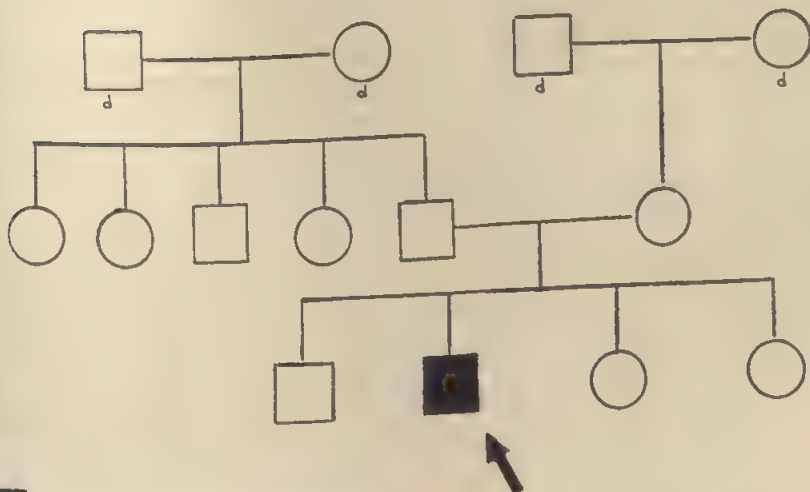
1. Index Case is a 29 year old Paranoid Schizophrenic with Catatonic features, hospitalized, 1950

Figure 3. FAMILY HISTORY GROUP - RECESSIVE PATTERN (I.L.L.)¹

Hospitalized for Schizophrenia

d died

1 Index Case is a 36 year old Chronic
Paranoid Schizophrenic, hospitalized, 1948

Figure 4. NEGATIVE FAMILY HISTORY (CA)¹

Hospitalized for Schizophrenia

d died

1 Index Case is a 33 year old Chronic
Paranoid Schizophrenic, hospitalized, 1953

An example of the Family History Group, Recessive Pattern, is seen in Figure 3.

Case 3 : The patient (I. L. L.) is a 36-year-old, divorced, white male with 3 children. He has been hospitalized almost continuously since 1948. Diagnosis : chronic schizophrenic reaction, paranoid type. His symptoms, including hallucinations, continue but he has adjusted to a withdrawn ward life.

Family background history revealed his parents were not psychiatrically ill and had never been hospitalized. However, a maternal uncle and a paternal uncle were hospitalized for schizophrenia. In addition, one of the patient's 10 siblings, a sister, was hospitalized for 11 years because of schizophrenia. None of the other siblings has ever been psychotic.

An example of the Negative Family History Group is seen in Figure 4.

Case 4 : C. A. is a 33-year-old, white, male, single, college graduate who has been hospitalized since July, 1953. Diagnosis : chronic schizophrenic reaction, paranoid type.

This patient's family history is, to the best of our knowledge, completely negative for schizophrenia. The family is characterized by high achievement. The patient's paternal grandfather and father are both educators. The patient's father is the oldest of 5 successful siblings. The maternal grandfather was a successful businessman. The patient is the second of 4 children. The oldest brother is an engineer and married. The patient's older sister is married to an engineer and has 2 children. The patient's younger sister, a teacher, is also married.

A scale for familial incidence may be

utilized in the selection and evaluation of schizophrenic patients. The scale found in Table 1 provides a numerical score based on the sum of the coefficients (or closeness) of relationship of affected individuals to the index case, each sibship being represented only once(20).⁸ Family data are also recorded in the notation of the pedigrees in Figures 1 to 4. Each key contains a number of symbols which may be used in each family-figure position ; symbol as well as position may be coded.

One implicit but major hypothesis in the rationale for coding evaluations of a number of factors, *e.g.*, familial incidence, genetic pattern as well as diagnoses, *etc.*, is the possibility that biological findings are often averaged out by comparisons between series of schizophrenics and normal controls. Even when there are one or more deviant findings, the usual approach is to repeat the experiment with another sample. However if subtypes exist, on whatever basis, it is possible that the next sample may not include a similar representative. If the finding is a borderline one, or perhaps emerges as a "cluster" within a normal range of values, the means for repeating and substantiating such data become even less likely.

Thus, by the use of criteria for selection as well as in the coding of identifying data, it should be possible to provide similar sub-

⁸ This particular scale emphasizes dominant inheritance ; another scale might be devised to emphasize recessive inheritance.

TABLE 1
SCALE FOR FAMILIAL INCIDENCE IN THE SELECTION OF SCHIZOPHRENIC PATIENTS¹

Parent	Aunt or Uncle	Parent	Aunt or Uncle	Sibling	Score	NIMH Sample
X		X		X	1.50	1
X			X	X	1.25	0
X		X			1.00	0
X	X			X	1.00	2
X			X	X	1.00	1
	X		X		.75	2
X				X	.75	1
	X				.5	0
			X		.5	0
				X	.5	1
					0.0	6

¹ Data refer to first 14 admissions

jects from previously screened reserves. This, of course, can be progressively differentiated. In addition, it would be possible to intensify a distinguishing characteristic, e.g., a similar individual from a family history of recessive pattern, but with further indications of recessive inheritance. Obviously the biochemical differentiation of new subgroups would be in itself an important contribution.

Utilizing the criteria for selection as described, the patient population of 3 nearby hospitals was screened. Modification of the criteria for selection was necessary. Table 2 compares the selected Family History and Negative Family History Groups with the initial criteria for their selection. Table 3 reveals the decreasing number of

subjects available as additional criteria for selection are imposed, i.e., male, white schizophrenic, age range, duration of hospitalization and familial pattern.

Data on schizophrenic patients from Family History and Negative Family History Groups, accepted for admission to the National Institute of Mental Health, are presented in Table 4.

The biological bias was kept primary and environmental factors were not considered in selection. Clinical status variables are also secondary in selection, but are likewise evaluated. Such additional data may in turn provide even more discriminating criteria for selecting new subgroups for biological studies.

TABLE 2

COMPARISON OF FAMILY HISTORY AND NEGATIVE FAMILY HISTORY GROUPS WITH INITIAL CRITERIA FOR SELECTION

	Initial Criteria	Family History Group	Negative Family History Group
Diagnosis	Schizophrenic	Schizophrenic	Schizophrenic
Sex	Male	Male	Male
Race	White	White	White
Age Range	20-35	29-41	25-37
Years Hospitalized	3-5	1-18	3-14
Availability of Parents	Alive and available	*	Alive and available

Hospital records available for all family members diagnosed schizophrenic

TABLE 3

SELECTION OF SCHIZOPHRENIC PATIENTS FOR BIOLOGICAL STUDIES: FAMILY HISTORY AND NEGATIVE FAMILY HISTORY GROUPS

	Referring Hospitals			Total
	I	II	III	
Number of Patients	2,800	3,500	7,200	13,500
Male	1,270	1,600	3,660	6,630
Schizophrenic	620	760	2,100	3,480
Age Range, 15-45 years	290	310	867	1,477
Age Range, 18-40 years, white, male Schizophrenic ;				
hospitalized more than 1 and less than 15 years	138	105	168	411
Family History*	24	15	20	59
Admitted	5	2	1	8
Negative Family History *	105	89	137	331
Admitted	2	2	2	6

* Only those members who clearly met the criteria for Family and Negative Family History designations are included. Histories for 21 families were insufficient for diagnostic purposes. Totals may be somewhat modified on the basis of on-going evaluations.

TABLE 4

ADMISSION DATA ON SELECTED SCHIZOPHRENIC PATIENTS¹

					Admission Data			
Age (Year)		Diagnoses			First	Last	No.	Total Years
Family History Group—Dominant Pattern								
FA	30	Undiff.	Undiff.	(Hebephrenic)	1948		1	10
VG	35	Hebephrenic	Catatonic	(Hebephrenic)	1944		1	14
QM	29	Paranoid	Paranoid	(Catatonic)	1950	1951	2	8
GA	36	Simple	Undiff.		1940	1941	2	18
DQ	40	Hebephrenic	...		1937	1953	4	8
Family History Group - Recessive Pattern								
ILL	36	Catatonic	Paranoid		1948	....	1	10
EQ	41	Catatonic	Catatonic		1938	....	1	20
LQ	33	Simple	Simple		1947	....	1	11
No Family History Group								
CA	33	Paranoid	Paranoid		1953	....	1	5
KE	30	Paranoid	Paranoid		1954	1955	2	3
ILS	37	Catatonic	Undiff.		1942	1951	3	14
BL	25	Catatonic	Catatonic		1948	....	1	10
BI	27	Hebephrenic	...		1948	....	3	10
QB	33	Hebephrenic	...		1953	....	1	5

¹ White, male. Data refer to first 14 admissions.

* Discharge diagnoses at referring hospitals

** Consensus diagnoses at National Institute of Mental Health. Parentheses indicate qualifying features.

*** Consensus diagnoses as yet not formulated.

Many questions relating to the biological and/or psychological may be raised by the composition of our Family History and Negative Family History Groups. (*The selection of schizophrenic patients for participation in family studies alone may be based on similar criteria.*) In what ways is the mother of one schizophrenic offspring different from the mother of 2 or more schizophrenic offspring? How do schizophrenics without a model for psychosis compare to schizophrenics in a family with 1, 2 or more models? How similar are such models? If there is schizophrenia in 3 generations and also related schizoid and healthy individuals in the family group, what information can be gleaned as to common psychological or biological findings? The selection of normal-control volunteers (2, 8) extends these research areas.

We may conclude that the process of selection of schizophrenic subjects for research study becomes an important part of the research itself.

SUMMARY

1. The method of selection of a small group of schizophrenic subjects for long-term biological studies is an essential part of the research. In developing criteria the following concepts are considered: (a) range of variation of irrelevant variables, (b) random sampling, nonpurposive bias and purposive bias, (c) extension of the sample and intensification of pertinent characteristics of patients through the process of selection and evaluation.

2. Variables presumably irrelevant to schizophrenia are restricted: e.g., age, sex, race, length of hospitalization and complications of hospitalization and treatment. The acceptance of limitations inherent in a chronic schizophrenic sample presupposes that schizophrenia is a reflection of an ongoing psychophysiological process (which however may appear only under certain operant conditions). The need for the study of acute schizophrenic and other samples is stressed.

3. An operational framework for biological versus psychological factors in schizophrenia is considered; the assumptions involved are tabulated. The working hypothesis assumes that there is a group of schizophrenias. Within this framework, process schizophrenics, catatonic and hebephrenic subtypes and twins concordant or discordant as to schizophrenia are discussed as means for sample bias.

4. A genetic-familial design is presented as the basis for a biased sample. It was decided that the widest sampling of genetic causes would be achieved if one-fourth of the sample had a family history suggesting dominance; one-fourth a history suggesting recessiveness, and one-half a negative family history. The patients with negative family history would be more likely to include an uncommon genetic type and also would render less likely the exclusion of the very group for which selection-bias is intended. The minimal conditions are as follows: (a) Family History Group—The Dominant Pattern; one schizophrenic parent; (b) Family History Group—The Recessive Pattern; neither parent affected but with at least one affected sibling; (c) Negative Family History Group; no history of schizophrenia within the family unit.

5. The decreasing number of subjects available from a patient population of 13,500 in 3 collaborating hospitals is noted as the following additional criteria are imposed: diagnosis of schizophrenia, male, white, age range 18-40, duration of hospitalization of more than one year and less than 15 years, and familial pattern. A comparison of Family History and Negative Family History Groups with the initial criteria for selection is made; data referring to the first 14 admissions are presented.

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THE PRACTICE OF PSYCHIATRY IN ENGLAND UNDER THE NATIONAL HEALTH SERVICE, 1948-1959¹

A. SPENCER PATERSON, M.D.²

It is a great privilege for me to be given this opportunity of reporting to you on the practice of psychiatry in England during 10 years of the National Health Service. I shall try to answer the questions, "How far has the psychiatric patient benefited, and what has been the impact of the Service on the psychiatrist's freedom of action and on his professional standing?"

In the last 25 years there has been an unparalleled advance in our knowledge of mental illness, especially in the sphere of therapeutics, and the world owes much to American medical science for originating or developing a number of fruitful procedures. Many British psychiatrists, like myself, owe a debt to American teachers which can never be adequately repaid. I was assistant in psychiatry at the Phipps' Clinic under Adolf Meyer and worked in Britain with the distinguished expounder of his doctrines, Sir David Henderson. I have also had the privilege of observing pioneer work at different centres in your vast country in the course of 3 previous visits.

When the visitor reflects on some of the greatest achievements of American medicine, he will no doubt realise that behind these achievements lies a tradition of individual freedom and enterprise, of healthy competition, and also of social service on the part of professional men and other citizens. At the same time the visitor may be led to doubt whether the medical profession together with the civic authorities and voluntary organisations have up till now created an efficient enough instrument to bring the benefits of all these medical and psychiatric advances to the average sick patient.

A study of recent American medical literature confirms the impression that there is an impending crisis with regard to medical administration. A statement for instance

made by the Board of Trustees of the American Medical Association runs as follows:

We can all agree that the American people should have access to the best possible health services. There is no debate on this specific objective. There is however divergence of opinion as to how and when this can best be accomplished (2).

This divergence of opinion apparently reflects the question whether private insurance will be the main instrument in providing the necessary services. Certainly at the present time medical insurance does not appear to provide an adequate answer to the problem of treating the psychiatric patient. A recent writer in the *American Journal of Psychiatry* states that only 10% of America's population is in a financial position to "buy" psychiatric care on the traditional "fee for services" basis.

Thus 90 percent of our fellow citizens must look to the Government or private philanthropy to help them, or they borrow and build up a crushing burden of debt; or they just go without treatment. . . . In this country, current pressures for additional and more available psychiatric services can push us toward Government responsibility for all forms of psychiatric care.

The writer then says that there is another possibility which is more in line with social evolution in America. This would be a working partnership of voluntary and individual effort with help from the Government (1).

The degree to which many Americans are afraid of this Government help may be judged from the statement of a past Vice-President of the A.M.A. when discussing a dispute between the A.M.A. and the Veterans' Administration. He writes:

The Veterans' Administration program is expanding government control over the nation's medical care system and is providing a big entering wedge for a complete Federal health program covering the entire population.

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

² West London Hosp., London, Eng.

The writer went on to state that the American Legion and the A.M.A. should be working together in the fight against Communism and also to defend the free enterprise system and to build up a positive understanding of Americanism (11).

We in England can sympathise with our American colleagues when they are apprehensive with regard to the ultimate consequences of submitting the medical profession to some degree of Government control. We had some of these same fears in 1948, but I am bound to say that after 10 years of the National Health Service, most psychiatrists would agree that the benefits which have accrued to the average citizen who is suffering from neurotic or psychotic illness, and also certain improvements in the conditions of work for the psychiatrist have up to the present at least outweighed any disadvantages of the system.

The distinguished writer whom I have just quoted mentions Communism but there are of course many essential differences between the National Health Service in England and the system of state medicine in Russia. I cannot speak with authority on the Russian system, as I have not visited that country since 1929, but some of its characteristics have been described in the following terms. Medicine has been entirely subjected to the goals of the regime. The Government could not therefore tolerate any independent professional body of doctors. The medical man does not apparently think of himself so much as practising a profession as being a member of a Trade Union. According to Russian ideology the aim of the medical profession is to prevent and to treat illness because it hinders productivity. The Russian physician is thought by foreign critics to be imbedded in a bureaucratic structure which is controlled by a political party. His first duty is thought to be not to the patient but to the State.

Under such a system various evils are said to ensue. Unsuitable orders reach the periphery from the central authority and these must be either disobeyed or else "formally" obeyed but disobeyed in spirit. This is obviously bad for the morale of the physician, while the administrators working at a distance get out of touch with what

is happening at the doctor-patient level. It is said that initiative and enterprise at the periphery are stifled by too many directives from the central authority. Further, conscientious practitioners may be intimidated by threatening letters in the Press or by branches of Trade Unions. The authorities may favour the appointment of a doctor to a responsible post by reason of his politics rather than for his technical skill.

These are some of the criticisms directed against the Russian system by refugees who eventually reached America from the Soviet Union. Nevertheless these same refugees stated that this system of medical care had hitherto been unsurpassed in their country and even those refugees who had personally had unfortunate experiences under the system emphasised that in their opinion some form of state medicine was preferable to one based on free enterprise (5).

Medical men in Russia after the Revolution were faced with a different problem from that which existed in England in 1948. Their task was to create a health service as quickly as possible for their gigantic population where almost no service already existed, and so they went about the problem, not unreasonably, as if they were planning a huge military campaign. The enemy in this case however was not a hostile state but disease in its various forms. But when the National Health Service was introduced into England in 1948, the situation was quite different. The new British service did not entail a complete break with the past. On the contrary the aim was to absorb all that was good in the existing services into the new scheme. Parliament intended that the benefits which had been available only to insured persons, or to those who could afford them, or receive them as a form of charity, should now be available to everyone. At the same time the essential freedoms were to be safeguarded. The citizen was free to use the Service or any independent part of it, as he pleased. He was free to choose his own doctor and to change to another if he so desired. The doctor on his part was free from interference in his clinical judgment and was free to make any criticisms of the Service which he wished. He could accept

private patients while taking part in the Service, or again, he could have an entirely private practice and so remain outside the Service.

It should be noted that the creation of the National Health Service did not constitute a Party issue but was supported by all Parties, including the Conservatives. The Service is now being used by 97% of the population. The great majority of specialists, 90% of family doctors, and almost all druggists, are co-operating in the scheme.

It is of interest that when the scheme was initiated the late Lord Horder founded the Fellowship for Freedom in Medicine. This body has regularly published a journal which keeps a close watch on the medical man's professional freedom and interests. It has recently advocated a system of State Insurance through which it is hoped to save more of the Exchequer's money while giving more responsibility to the family doctor. There is however almost no chance that this scheme will be supported by any

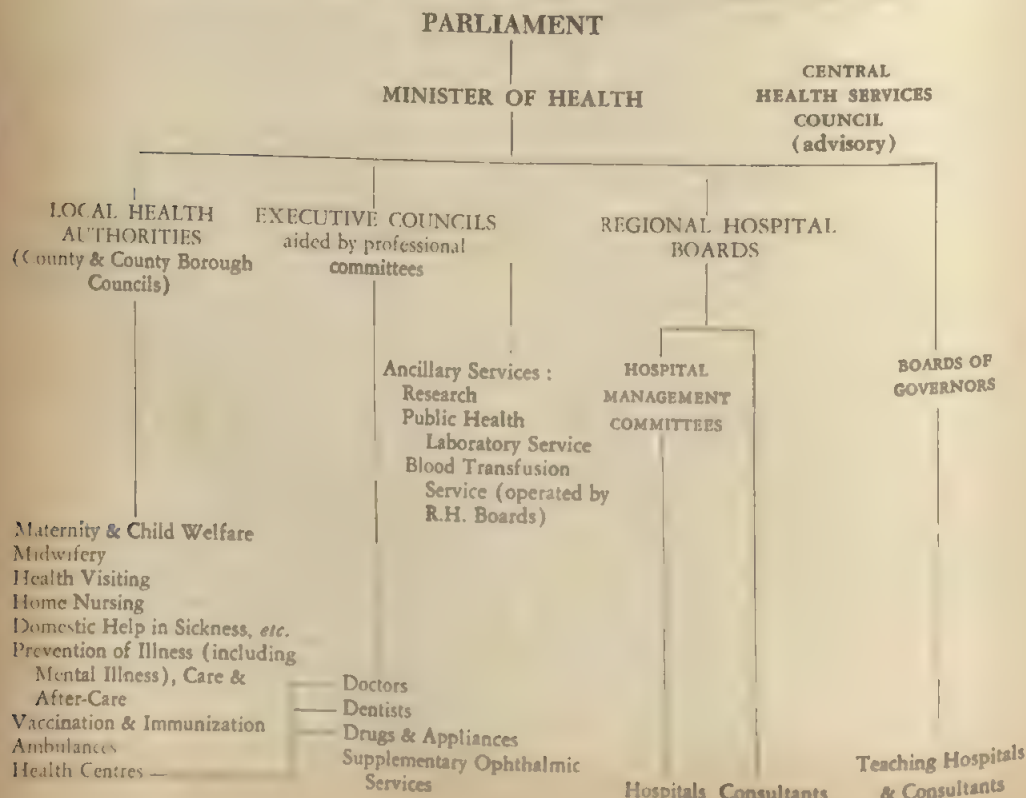
political party. The present system is too popular with the public for that. There is however an increasing number of citizens who are taking out private health insurance policies, but this is no reflection on the efficiency of the National Health Service because most patients who do this are merely aiming at securing better amenities during treatment. A proportion of them however pay sufficiently high premiums to enable them to have treatment wholly outside the Service. This development will therefore entail more private practice for the part-time psychiatrist in the future.

THE MACHINERY OF THE NATIONAL HEALTH SERVICE

The Service in Britain is administered centrally by the Ministry of Health advised by a Central Health Services Council and various committees. There are 3 main divisions of the Service(6).

1. Hospital and Specialist Services.
2. Local Authority Services. After-care,

TABLE 1
ORGANIZATION OF THE NATIONAL HEALTH SERVICE IN ENGLAND AND WALES



maternity and child welfare, midwifery, health visiting, domestic help in sickness, prevention (e.g. vaccination), ambulances and health centres.

3. Practitioner and Dental Services.

With regard to the first division, the 14 Regional Hospital Boards, which look after regions with populations varying from 1 to 3 million, are responsible for all the mental hospitals (147,000 patients) and all the mental deficiency hospitals (60,000 patients) and for the outpatient services (3, 8).

Secondly, the Local Health Authorities are responsible for the care of the defectives in the community (80,000) and for the prevention of mental illness and for the after care of those who have been in mental and mental deficiency hospitals. The Medical Officers of Health are now tackling the problems of mental health which impinge on their sphere of activity with the same enthusiasm with which they had previously overcome the threats of infectious diseases such as cholera, enteric fever, diphtheria, and the like. Their Society has recently established a mental health group and there is now more psychiatry in the syllabus of the course for the Diploma of Public Health. There is therefore good reason to hope that with these new-found allies, we psychiatrists will make still further progress in the coming years in our struggle against mental ill health.

Thirdly, the family doctors are much more interested in psychiatry than formerly. The newly founded College of General Practitioners has published a Report (4) which discusses such questions as how to improve the quality and quantity of psychiatric education both for the undergraduate and for the postgraduate practitioner. The family doctor in the future may be expected to look after the mental health of his patients with more understanding than previously when he relied mostly on intuition.

BENEFITS ACCRUING TO THE PSYCHIATRIC PATIENT FROM THE NATIONAL HEALTH SERVICE

The first indication in the campaign against mental ill-health was to treat as many patients as possible and at as early a

stage in their illness as possible. Accordingly some 500 new outpatient departments have been started in the past 2 or 3 decades and many of these in the past 10 years. They are mostly attached to general hospitals (9). Where the hospital is a teaching one, there is generally a number of beds which are used for research and teaching. It is reckoned that the psychiatric patient is willing to go to such a clinic 12 or 18 months earlier than he would be willing to go to a mental hospital. There has been at the West London Hospital an increase in the number of patient-sessions per annum since 1945 to the extent of about 500%. The number of psychiatrists has gone up from 3 to 10 and the non-medical staff has been correspondingly increased.

There has also been continuous research, mostly into active methods of therapy, particularly electrocerebral treatment, ataractic drugs, and hypnosis. These are subjects suitable for research in a general hospital where collaboration with colleagues in other disciplines is possible. This does not mean that psychotherapy is neglected. However, as in America, much thought is given to the possibility of shortening the duration of treatment while achieving an equally good result.

Our clinic is merely one of many, but when such clinics are multiplied to the extent of some hundreds, then results begin to show in statistics.

Not only has the number of clinics increased, but under the National Health Service the number of consultants has increased to a greater extent than in any other specialty. In 1949 there were 405 but in 1957, 614, an increase of 52% compared with an average 32% increase in other specialties. Similarly the trainee-specialists (senior registrars) have risen from 113 to 144, a greater increase again than in other branches of medicine. This should be of interest to American psychiatrists, for recent publications have deplored the lack of trained psychiatrists in mental hospitals (10).

The training of the psychiatrist is much more thorough nowadays than it was before 1948. He is encouraged to take a higher diploma in internal medicine as well as one in psychiatry. He is expected to be as equally at home in giving different

forms of physical treatment as he is with psychotherapy. Young psychiatrists, especially those residing near London, often undergo at their own expense a long and expensive training analysis with a view to future practice of this method.

With regard to inpatient treatment in mental hospitals, this can be conveniently divided into short stay and long stay. Since 1946 the number of patients admitted to mental hospitals has much more than doubled, from 36,000 to 84,000, an increase of 125%. The percentage of patients discharged within 3 months has risen from 50 to 55% in 2 years, and from 65 to 69% for those discharged within 6 months. This more than doubling of the numbers of short stay patients has of course greatly increased the amount of work done by mental hospital psychiatrists, but the actual number of beds occupied has actually fallen within that period by 1,353(9).

Recently however, there has been an even more striking trend. The question was asked, why should not a large proportion of these short stay patients be treated outside a mental hospital? Dr. Carse in 1956 organised "The Worthing Experiment" in which psychiatrists visited patients in their homes and, where necessary, gave them energetic treatment in an outpatient clinic or day hospital. It was found in this way that in a rural area a reduction in the rate of admissions by 57% could be achieved. A surprising feature of this study was that a high proportion of the patients who recovered without going into hospital belonged to the class over the age of 65, where one would have supposed that the prognosis was particularly poor.

With regard to the long stay patient equally striking experiments are being carried out(7). As in America, the greatest efforts are being made to rehabilitate long stay patients who have shown some response to treatment with electroshock and ataractic drugs(12). The services of experts in sociology and group psychology have been enlisted, as at Netherne under Freudenburg(8). Elaborate measures are taken to train the nursing staff and secure their co-operation in what is a particularly arduous task. The patients are gradually subjected to work therapy, and at Banstead

a factory actually exists inside the hospital. These measures are carried out in a particularly humanitarian atmosphere. There is a growing tendency to do away with locked doors. Attempts are made to invest the recovering patient with a new dignity. He is now called "Mr. Smith" instead of just "Joe." There is an increase in the mingling of male and female patients with a notable improvement in their manners and behaviour.

Before this new development the percentage of patients who had been in a mental hospital over 2 years and who became well enough to leave the hospital was only 2% per annum. It is likely however that in the future this figure will be increased to 10 or 20%.

It is because of the rise in numbers of successfully treated short stay patients and to a lesser degree of long stay patients that the Royal Commission on Mental Disorder and Mental Deficiency, 1956, was able to recommend new measures which are incorporated in a Bill now before Parliament (8). One result of this will be to arrange for the more effective care of recovered mental patients and improved mentally defective patients in the community. New measures will include the establishment of hostels, day hospitals, homes for the aged and the like. The new Mental Health Bill also aims at a more rational approach to the problem of mental disease, bringing it more into line with the rest of medicine.

I realise of course that the great advances in treatment to which I have alluded, have been equalled, or even surpassed, in some other parts of the world, especially America, but the point I wish to make is that in our country the improvements in therapy have been brought to the ordinary citizen to a far greater extent than would have been possible if it had not been for the National Health Service. It is certainly true that any fears which might have been entertained that socialised medicine might stifle initiative among practitioners working at the periphery have not been realised. On the contrary, there has been a new enthusiasm which has in large measure been responsible for these new developments.

It may perhaps be added that the smooth running of the Service has been helped by particularly good relations which have ex-

isted between psychiatrists and the public, the latter including members of the Civil Service. This goodwill has been greatly fostered by a series of programs on radio and television, and in the press. It is to be hoped that such publicity will continue, because only in this way will the citizen appreciate what he is receiving in return for the taxes which he pays to support the Service.

PRIVATE PRACTICE UNDER THE NATIONAL HEALTH SERVICE

Only 2% of approved mental patients are treated privately(9) but in spite of this there is still a considerable amount of private practice in psychiatry, mostly in urban areas.

In the years before the war the prospects of a career in psychiatry were not very attractive. An article in the *British Medical Journal* in 1937 stated that nearly all psychiatrists were whole-time officers in mental hospitals and that the pay was poor and the chances of promotion were limited. A brighter prospect however was presented to the relatively small number of psychiatrists who could procure a post in a general teaching hospital where they could combine the teaching of students with opportunities for research and also carry on a consultant practice. Such a life however would be a hard one with little time for leisure and their hospital work would not be remunerated.

In London and some other cities there were also doctors specialising in psychotherapy and there was the Institute of Psychoanalysis. One-third of the psychoanalysts had no medical degrees. Many so-called psychotherapists had no senior qualification.

The following were some of the changes which occurred in the mode of life of the consultant at a teaching hospital, when the National Health Service was initiated in 1948. We were no longer honorary psychiatrists at our hospitals but received salaries for our attendances there. We were free to decide whether we would work for any number of half days up to 9 in the week, 11 half days being counted as a full week. Most of those working 7 or 9 half days are employed at more than one clinic. We were of course free to remain outside

the Service if we so desired.

For those working full time the salary scale is roughly as follows: A young consultant at the age of 30 has about £2,000 a year rising to a maximum salary of £3,385 a year. There is however a system of merit awards by which 20% obtain an additional £500, another 10% an additional £1,500, and another 4% an additional £2,500 over the basic salary. Recently the sum of £300 has been subtracted from the highest merit award and £200 from the second highest, apparently indicating a new egalitarian trend.

The pension amounts to 1.5% per annum of all the money which has been earned under the Service. This compares favourably with other schemes of a like nature.

The Ministry encouraged psychiatrists to visit patients in their own homes. In this way the specialist can discuss the case with the family doctor and also observe the family setting. In many cases this has enabled active steps to be taken at the earliest possible stage of the illness. The psychiatrist is paid 4 guineas (about \$12) for the visit, plus a travel allowance. He may earn some 800 guineas a year over and above his basic salary in this way.

The same applies to the full time man but in his case the first 28 visits in each quarter are unpaid except for the travel allowance.

Those who prefer whole time service have benefited under the Service because a number of new and attractive posts have been instituted. There have been 9 new whole time professorships at provincial universities, and some two dozen appointments of whole time research workers who initiate and organise research projects which are often common to different hospitals in the same group.

For those who are part time there is still a great deal of private practice in London. As already mentioned there is an increasing number of citizens who have taken out a health insurance policy. This will enable the patient to see the psychiatrist privately and to obtain better amenities under the Service. If the premium is high enough it will enable the patient to receive treatment in an expensive room under the National Health Service or else outside the Service altogether.

There is another source of private practice. There are many visitors from overseas, especially in summer. These are not British subjects but are glad to avail themselves of recent progress in psychiatric treatment. They often provide a colourful change from our more humdrum work.

There still appears to be a considerable demand for private psychotherapy in London and possibly to a lesser extent in other cities. In addition to the part-time consultants already mentioned, there are a number of psychotherapists who do private practice but who also work at a clinic like the Institute of Psychoanalysis. There are also practitioners who are entirely in private practice. Many of these write books on popular psychiatry for the general public. Some of them, however, have not had any adequate training nor any diploma in psychiatry, and are sometimes referred to as "consultoids." Their success to some extent depends on the fact that the public as a whole looks on a Harley Street address as a kind of medical degree. By way of contrast to these practitioners there are a number of distinguished psychiatrists who have retired from the Health Service and who are now in full time practice. A few psychiatrists of repute work in private institutions and also engage in consultant practice as well.

CONCLUSION

In conclusion I should like to say that in America and Britain psychiatrists are striving towards the same goal, for we are trying to give the best possible psychiatric treatment to the greatest number of citizens who require it. In Britain however it

was decided after the war to conduct the struggle against mental illness at the National level. I have therefore attempted to give you some account of how far our efforts have succeeded and of how far in doing so we have preserved our ancient tradition of professional freedom.

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PSYCHIATRIC DAY HOSPITALS¹

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A day hospital may be defined as one where full hospital treatment is given under medical supervision to patients who return to their homes each night. It offers an alternative to inpatient admission to those for whom outpatient treatment is inadequate. It is suitable for those of the mentally ill who are well enough to travel and to spend the night with their families.

REVIEW OF LITERATURE

In North America, Cameron(6) in 1947 described day hospital care in Montreal and first introduced the term to Western literature. He treated "early . . . or mild advanced types of schizophrenia. Both hypomanic and depressed patients have been successfully treated." There were both hallucinated patients and those with suicidal ideas. An important function of this unit was the care of convalescent inpatients. He stressed cheapness, swiftness of recovery and importance of easy transfer to bed wards. These have been recurrent themes in later publications.

The Menninger Clinic day hospital started in 1949, and Barnard *et al.*(3) reported that one-third of all patients were treated on a day basis. It provided foster homes for patients who lived out of town. The 109 patients stayed an average of 70 days each and 90 were convalescent inpatients. The patients included 33 schizophrenics and 33 with character disorder.

Moll(17) founded a day hospital in the Montreal General Hospital in 1950 on Cameron's pattern. He used all forms of treatment except coma insulin. Depressive illnesses occur first on his list of diagnoses, although no figures are given. He found acute psychotics and defectives unsuitable. Many of his patients were not sufficiently ill otherwise to need inpatient care.

Pottle(18) runs a day hospital in sparsely populated Newfoundland. Government subsidized transport and lodgings ensure attendance of patients at a specially designed day care unit in the first floor of a new mental hospital. All forms of treatment including coma insulin are given, one irreversible coma occurring in 5 years practice. Landladies are instructed in the treatment of hypoglycaemia.

Cameron, reviewing 9 years practice (7), decided that, as transfers from day hospitals to inpatient wards were "infrequent," the former could well be independent. However, patients with suicidal ideas and disturbing behaviour could best be treated first as inpatients. One suicide occurred in the period reviewed. He feels that coma insulin treatment is quite satisfactory on a day care basis.

Bierer(4, 5) described the first day hospital in England. It is entirely independent of mental hospitals. The frequency of attendance by patients varies from 1 to 12 or more times a week. It is designed to function as a community centre. All forms of physical treatment, apart from coma insulin, are used. He advocates group treatments and the advantages of independence are stressed.

Aron and Smith(1) describe the Bristol day hospital. Geographically apart, but run by Bristol mental hospital staff, transfer of patients to and from the mental hospital is simple. Forty-four percent of the patients had depressive illnesses. The average number of days attended was 21, attendance becoming less frequent as the patient recovered. Smith(19) reviewed 1,000 Bristol day hospital patients, of whom 16% had been convalescent in patients and 10.4% had needed transfer to bed wards. The proportion of depressions treated had risen to 57% in 1955 and 9% had schizophrenia. Coma insulin had not been used.

Cosin(8, 9) describes a geriatric day hospital. Since it is run as part of a geriatric hospital the 70 day patients required no extra medical staff.

Harris(13, 14, 15) has reviewed the de-

¹ I am indebted to Professor Aubrey Lewis for his encouragement and to Dr. Arthur Harris for his help and permission to use the clinical material of the Bethlem and Maudsley Day Hospitals.

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velopment of the Maudsley and Bethlem Royal Day Hospitals. Admission criteria are those appertaining to inpatient beds, and attendance 5 days a week is obligatory. Harris suggests that speedier treatment may be possible in day hospitals, owing to the patient remaining in his home surroundings.

In Nigeria, Lambo(16) has adapted the day hospital idea to an African community and uses a day centre with night foster homes. He uses both insulin coma treatment and ECT.

The first day hospital in Russia started in Moscow in 1932(11). Day hospitals were considered as departments of mental hospitals and where the latter were overburdened were intended to take on all their functions. The Moscow day hospital treated 1,225 patients in 4 years, 47% having schizophrenia, 30% neurological diseases including taboparesis, but only 6% with manic-depressive psychosis. Practice and results were further reviewed after 12 years (12).

DIAGNOSTIC CATEGORIES OF PATIENTS TREATED

This can be illustrated by figures drawn from published data, analysis of patients treated at the Maudsley Day Hospital over a 3 year period and personal communication from Bierer and the South West Regional Hospital Board.

Diagnostic usage almost certainly varies between countries, but it is clear that day hospitals can be adapted to deal with widely different groups of mentally ill patients. In England depressive illnesses account for a considerable proportion of those treated.

ENGLISH DAY HOSPITAL PRACTICE, 1956

Enquiry at the Ministry of Health revealed that at least 10 day hospitals were open in England in 1956. The author worked at the Bethlem Royal and Maudsley day hospitals. To investigate practice elsewhere, those units treating more than 10 patients daily were either visited (The Marlborough, Bristol and Oxford Day Hos-

	Dzhagarova 1937	Menninger Clinic Barnard 1952	Bristol (SWRHB) 1957	Marl- borough Day 1956	Nigeria Lambo 1956	Maudsley Day 1953-56
Schizophrenia	47%	30%	10%	35%	24%	8%
Manic-depressive psychosis	6%	7%	29%	3%	6%	25%
Involuntional melancholia		6%	11%			11%
Other psychoses	38%	2%	2%	—	16%	4%
Neurotic depressive reaction	9%	25%	33%	38%	54%	28%
Anxiety neuroses			9%	24%		12%
Psychoneuroses and others			8%			7%
Personality disorders				30%		4%		5%
Relevant numbers of patients	1225	109	342		146	300
(Total depressive illnesses)	6%	—	73%	41%	64	64%

pitals) or discussed with their Directors (Oldham and Birmingham).

Two types were found. The Marlborough under Dr. Bierer was entirely independent. The other type was associated with a parent mental hospital: the Bristol Day Hospital under Dr. Smith, treated general psychiatric patients; at Birmingham, under Dr. Mayer Gross, there was an experimental unit treating chronic neurotic patients, many on National Assistance; the Oldham Day Hospital under Dr. Pool, was a unit in a community care programme; Oxford, under Dr. Cosin, treated mentally and physically ill geriatric patients; the Maudsley and Bethlem accepted only those who would otherwise have needed mental hospital admission.

The main group of patients admitted to day units were those for whom outpatient treatment was inadequate or unsatisfactory, but who did not require admission to the acute ward of a mental hospital. The day hospital contributed most to the reduction of inpatient waiting lists, when it accepted only patients who would otherwise have required inpatient admission, as at the Maudsley. It also functioned as an alternative to outpatient treatment when a number of part time attenders were accepted, as at the Marlborough. Most day units found it convenient to treat both those needing full time and part time treatment.

The psychoneuroses were most successfully treated at day hospital level. The majority of depressive illnesses would fall into this diagnostic group. Depressive illnesses were the major diagnostic entity for each of the English day hospitals from which figures were available. With psychoses the acutely disturbed were clearly unsuitable, but a considerable number of schizophrenic patients could be treated at day hospital level. The Maudsley accepted patients with a depressive psychosis, but none who presented immediate suicidal risks, and there were no suicides in a 3 year analysis. The acceptance of the seriously ill was found to depend upon the quality of home care available.

There was a wide measure of agreement on the methods of treatment used. A general emphasis on group activities was found, group discussions being a feature of most units. English day hospitals did

not use insulin coma therapy, although this has been used elsewhere, admission being favoured on the grounds of safety. Electroconvulsive therapy was used in all units and the practice was to have patients escorted home afterwards.

The use of transfer to a parent hospital was carefully investigated as Cameron stated that the need for transfer was "infrequent." The available figures showed that the annual transfer rate of the Menninger Day Hospital was 16%, of the Bristol 10.4% and of the Maudsley 14.7%. The last two units definitely found transfer facilities valuable. Ease of transfer to a hospital bed at short notice contributes to the safe management of a day hospital, since sudden acute exacerbations of patients' illnesses are not uncommon.

The main factors limiting the use of day hospitals seemed to be the geographical situation and the quality of home care offered by relatives. A great expansion in this field, to cover much of the country, would seem both economical and feasible.

SUMMARY

The literature on psychiatric day hospitals is reviewed and an account is given of day hospital practice in England in 1956, with respect to types of patients treated and treatment employed. It was found that day hospitals were treating a wide variety of mental illnesses, and that those treatments commonly employed in mental hospitals could also be used in day hospitals.

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CLINICAL NOTES

DEANOL (DEANER) IN THE TREATMENT OF SCHIZOPHRENIA

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Deanol (Deaner)² is the para-acetylaminobenzoate salt of 2-dimethylaminoethanol. It is the tertiary amine precursor of acetylcholine, and, unlike choline or acetylcholine itself, is able to pass freely across the blood-brain-barrier. The ability of deanol to increase cerebral acetylcholine has been postulated as the mechanism of its therapeutic action.

Deanol has been used chiefly as a central nervous system stimulant for mild depressions and chronic fatigue states. However, it has also been reported to be effective in chronic schizophrenics. This study was undertaken in an effort to confirm the latter results.

As a pilot study, 10 chronic schizophrenic females between the ages of 37 and 71, who had been continuously hospitalized for 5 to 27 years, were given deanol orally for 9 months in a single morning dose of 150-300 mgs. Within the first few weeks a mild stimulating effect was evident in 6 patients. They seemed a little brighter, more alert, more interested in their environment, although their delusions and hallucinations remained unaltered. However, in the subsequent months a further change slowly manifested itself in 2 patients. Their delusions and hallucinations seemed to be fading and were more difficult to elicit. It was concluded that deanol has 2 actions: a mild stimulating effect, and a moderate anti-psychotic effect (*i.e.* combats delusions and hallucinations of the schizophrenic). However, the anti-psychotic action was not as potent as that of the phenothiazines or reserpine. It was therefore decided to combine deanol with a tranquilizer containing a potent anti-psychotic effect.

Two hundred chronic female schizophrenics between 16 and 69 years of age were

selected. They had been continuously hospitalized for 3 to 27 years, 145 having been hospitalized for 10 or more years. All of the patients had been receiving tranquilizing drugs for at least 18 months with slight or moderate improvement. However, for the last 6 months they had reached a plateau and no further improvement could be detected. It was at this point that deanol was added. One hundred twelve patients were receiving chlorpromazine, 5 prochlorperazine, 70 a combination of chlorpromazine and prochlorperazine, 6 reserpine, 4 a combination of chlorpromazine and reserpine, and 3 perphenazine. The dose of these tranquilizers was not changed when deanol was added. Deanol was given in a single morning dose of 25 to 100 mgs., the majority of patients receiving 50 mgs. Deanol in combination with the tranquilizers was continued for 6 to 13 months. At this time 84 patients were unchanged; 99 were improved, 17 being markedly improved, *i.e.*, either released or ready for release from the hospital. Of the markedly improved patients 9 had been continuously hospitalized for 3 to 5 years, and 8 patients for 7 to 19 years.

It was again observed that the clinical effects of deanol manifested themselves very slowly. It usually took several weeks for the full stimulating effect to develop, and several months for the full anti-psychotic effect. Deanol did not produce euphoria; patients became less withdrawn, more alert, interested and energetic. There were no serious side-effects. Ten patients receiving 100 mgs. complained of anorexia, and two complained of jitteriness, but these symptoms disappeared when the dose was lowered to 50 mgs. There was no interference with sleep, and no evidence of tolerance to the drug.

From this study, it can be concluded that deanol, when combined with a tranquilizer containing a potent anti-psychotic action

¹ Rockland State Hospital, Orangeburg, N. Y.
² Riker Laboratories Inc., Los Angeles, Calif.

is of definite value in the treatment of schizophrenia. Not only does its stimulating effect counteract the excessive sedation and

lethargy produced by the tranquilizer, but its own anti-psychotic effect is additive to that of the tranquilizer.

A SAFE TRANQUILIZER: NIACINAMIDE HYDROBROMIDE AS A SAFETY FACTOR

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Attempts have been made to define a tranquilizer as any sedative which accomplishes its sedation without causing a condition of areflexia. A safe tranquilizer which meets these requirements is afforded by a combination of ammonium and potassium bromides with niacinamide hydrobromide as a safety factor.² Its mild tranquilizing effect and freedom from untoward responses have made this medication the one of choice in ambulatory working individuals. The objection of bromide intoxication has been fully met by the introduction of niacinamide hydrobromide (1, 2).

Tranquilizers, both new and old, have their specific side-effects and toxic reactions. Any method of overcoming these undesirable reactions is a step forward (3). Thus, the step of utilizing niacinamide hydrobromide to overcome the side-effect of bromide medication is a definite contribution to therapy.

Bromism depends upon 3 factors: (a) bromide concentration in the blood, (b) genetic predisposition (idiosyncrasy), and (c) the co-enzyme factor (1).

The first two factors are obviously involved in any medication and the characteristic unique feature of bromism has been the poisoning effect exerted by bromides on the respiratory co-enzyme mechanism, the di- and tri-phosphopyridine nucleotides (co-enzyme I and II). Disturbance of this co-enzyme mechanism can make the person uniquely sensitive and even cause bromide intoxication at low blood concentration levels. When the essential portion of the nucleus of the co-enzymes is supplied in the form of a pyridine metabolite (niacina-

mid hydrobromide), bromism does not occur.

The clinical syndrome of pellagra is analogous to, and has many of the characteristics, signs, and symptoms of, bromism,—that is, the cutaneous, digestive, and nervous changes induced thereby. Pellagra is also controlled rapidly by the use of a specific source of the pyridine nucleus such as nicotinic acid (3-carboxypyridine). The acneform and other irritative lesions on the face and exposed part of the body of both pellagra and bromism are quickly cleared when this essential portion of the co-enzyme nucleus is supplied exogenously. Thus, niacinamide hydrobromide represents a safety factor in tranquilizing bromide medication.

Since the original study (1) of 50 cases, comparing the use of plain triple bromides with the niacinamide hydrobromide combination, 440 cases have been added to series. Statistics show that some manifestation of untoward effect has been present in approximately 15% of the cases. True bromism has been demonstrated in approximately 4% of the cases. The total figure of 15% has been reduced to less than 2% with the use of the niacinamide hydrobromide combination.

A typical case study was that of a married woman, age 28, who was treated alternately with bromides and phenobarbital for relief of extreme nervous tension. In response to either medication the patient exhibited an acneform rash covering the whole body and causing pruritus at multiple sites. When the medication was withdrawn, the rash disappeared. It was found that the niacinamide combination with ammonium and potassium bromides prolonged the therapeutic effect and also prevented the rapid development of the untoward response.

¹ 150 Woodruff Ave., Brooklyn 26, N. Y.

² Natran tablets containing ammonium bromide 250 mg., potassium bromide 250 mg. and niacinamide hydrobromide 10 mg. supplied by the John Winters Co., 313 East 53rd St., New York 22, N. Y.

The appearance of pellagra-like symptoms with rapid clearing when the co-enzyme pyridine nucleus was supplied demonstrates clinically the mechanism of interference with the enzyme oxidation mechanism of the body economy by such substances as phenobarbital and bromide. Other newer types of sedatives gave similar results.

In summary, clinical and laboratory evidence suggests that tranquilizers, including the bromides, can interfere with the co-enzyme system causing the pellagra-like syndrome. There has been abundant clinical evidence that these symptoms are re-

versed in 87% of cases and the response has been to clear up 50% of the small group exhibiting actual bromism, when the combination of ammonium and potassium bromides with niacinamide hydrobromide as a safety factor has been used as a tranquilizer.

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INPATIENT TREATMENT OF DEPRESSIVE STATES WITH TOFRANIL (IMIPRAMINE HYDROCHLORIDE)¹

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M. SCHWARTZ, M.D., AND E. YACHNES, M.D.²

In 1957 Kuhn(1) published his first results with the new anti-depressive drug Tofranil³ (G-22355, imipramine hydrochloride), which turned out to have no monoamine oxidase (MAO) inhibiting effect, in contrast to iproniazid and its new and less toxic followers. Differences in the clinical actions of Tofranil and the MAO inhibitors are supposed but not sufficiently elaborated.

As a first step we therefore studied the action of Tofranil alone in a series of 66 hospitalized unselected depressed patients with different diagnoses, 28 male and 38 female, whose ages varied between 25 and 72 years. The majority of the depressions were endogenous (28 involuntal, 11 manic depressive), while 17 schizophrenic patients with depressive features and 10 patients with arteriosclerotic, senile or psychoneurotic depressions were also included. About one-third of all these cases were chronically depressed patients, some of whom had received ECT, insulin thera-

py, and different tranquilizing drugs without effect.

The drug was given by oral administration only, starting usually with a dosage of 75 mg. per day which was increased slowly to a mean dosage of about 200 mg. per day, adjusted individually. In some cases higher doses up to 400 mg. per day were used. It is believed that prolonged treatment with a low maintenance dosage is necessary to prevent relapses(2, 3). We used long term treatment, up to 5 months.

Best results were seen in endogenous depression, confirming findings of other authors(1, 4, 5). In this group, 10 patients (26%) recovered, 22 (56%) showed moderate to good improvement and 7 were unchanged. Schizophrenic patients did not respond as well, 10 remaining unchanged and 7 showing moderate or good improvement. The mixed group was also less responsive with 4 patients out of 10 showing some degree of improvement. The overall results showed that 65% of all patients treated manifested some degree of favorable response, with 17% total recovery. While these figures are lower than those reported by some previous investigators(4), the improvement rate in our cases of endogenous depression, 80%, is quite in line

¹ Preliminary note on a paper read at the Downstate Interhospital Conference, New York, April 6, 1959. Will be printed in full in J. Nerv. Ment. Dis.

² Brooklyn State Hospital, Brooklyn 3, N. Y.

³ Kindly supplied for this study by Geigy Pharmaceuticals, Ardsley, New York

with previously reported data.

From the standpoint of symptoms affected, best improvement was seen in affective depression, flow of psychological activity and alteration of thought process. Some patients showing overall improvement in the depressive state, nevertheless had worsening of one or two symptoms. In 9 patients impending or manifest agitation was observed, mainly with higher doses. In 8 of these patients, this agitation was controlled by administration of a tranquilizing drug (Thorazine, reserpine).

Other side effects observed were minor and consisted of dizziness, 3 patients, nausea, 1, blurred vision, 2, perspiration, 2, dry mouth, 2, and constipation, 2. A slight drop in blood pressure was observed in a few patients, but in some of our elderly patients this was actually a desirable side effect but not a constant one. Some of these side effects were seen only during the onset of treatment and disappeared as therapy continued. This was true for a slight tremor of the hands in 6 patients, but we observed no other extrapyramidal symptoms.

Improvement can be observed as soon as

the first or second day in some patients, but sometimes it takes 2 or 3 weeks. According to our experience, the patient who does not respond during the first 3 weeks, will not respond at all.

From the above we can conclude that Tofranil is the most potent antidepressive drug available at the present time, comparable in effectiveness with electro-shock therapy. While ECT may still be preferred in acute suicidal patients, it is our impression that this drug reduces the need for ECT drastically.

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NEGATIVE RESULTS IN THE TREATMENT OF DEPRESSION WITH IMIPRAMINE HYDROCHLORIDE (TOFRANIL)

FREDERICK LEMERE, M.D.¹

A number of reports from Europe and several from America have been enthusiastic regarding the effectiveness of imipramine hydrochloride (Tofranil, Geigy Pharmaceuticals) in the treatment of depression. My own experience with this drug in 137 private patients over a 2 year period has been disappointing. These were all cases in which depression was the most prominent symptom and most of them were of the endogenous type.

The dosage used was from one to two 25 mg. capsules q.i.d. for 3 or 4 weeks provided the patient could be persuaded to take the medicine that long. The size

and duration of medication were frequently limited by unpleasant side effects or failure of beneficial results. None of the side effects was serious but dizziness, dry mouth, blurred vision, increased tension and perspiration often caused the patients to discontinue this drug.

Only 22 of the 137 thought that imipramine was of help and their initial enthusiasm usually waned as the medication was continued. No patient has asked to or was interested in continuing this drug beyond the first trial month. The evaluation of the pharmacological treatment of depression is especially difficult because most of these cases are self limited anyway and whatever is being given at the time of recovery is credited with the cure. This is especially

¹ From the Department of Psychiatry, University of Washington School of Medicine, Seattle, Wash.

true where it is recommended that the drug be given for at least a month before judging its effect.

In view of reports of success with this

drug by others, it would seem advisable to continue clinical trials, especially control studies, but my own experience so far has been disappointing.

A MODIFICATION OF THE FORREST TEST FOR PHENOTHIAZINES

JACK J. HEYMAN, M.S., M. ALMUDEVAR, M.D., AND SIDNEY MERLIS, M.D.¹

The routine determination of phenothiazines in urine samples has been thoroughly investigated by Forrest (1-2) and separately by Pollack (3). In our laboratory we modified the procedure to obtain more stable color development and at the same time preserve the simplicity of the Forrest method.

MATERIALS

A sulfonic acid resin impregnated paper SA-1 or SA-2² was further prepared by immersing strips 7" x 3/4" in filtered 2% ferric chloride solution (2g FeCl₃/100 ml. H₂O). The paper was blotted dry with clean paper towelling and oven-dried at 80° C. The prepared paper is stable.

METHODS

A drop of urine from a morning sample was placed on the paper and one drop of 15% sulfuric acid placed in the center of the ring formed by the sample drop. A violet colored ring develops in the presence of metabolized phenothiazine. The color intensity observed is constant in intensity for

each individual patient on a constant drug intake. The drug intake can be graded (Table 1) by the intensity of color observed

TABLE 1
GRADING OF THE RESULT

Grade	Dose In Mg./Day/Pat.	Color
0	0-50	yellow
plus/minus	50-75	faint pink
1 plus	50-100	violet or red
2 plus	150-600	dark violet or red
3 plus	600-900	very dark violet or red
4 plus	Overdose	extremely intense, one or more rings, violet and red.

or by diluting the sample with distilled water and testing a 1:1 serial dilution. The last positive tube number is recorded for the particular patient at the dose given. If the dose is changed, the color intensity changes, and the number of positive tubes change.

The same procedure can also be used as a toxicological aid. With gastric juice the unmetabolized phenothiazines give red coloration while the urine will show an intense violet, red or both colors. By making a serial dilution, the quantity present can be estimated (Table 2).

Running the same dilutions with a known phenothiazine until a negative result is

TABLE 2
DILUTIONS OF SPECIMENS

Tube #	0	1	2	3
ml. of Sample	1 ml. urine or gastric juice	1 ml. urine or gastric juice	1 ml. of #1	1 ml. of #2
ml. of Diluent	—	1 ml. of H ₂ O	1 ml. of H ₂ O	1 ml. of H ₂ O
Fraction of original Concentration	1	1/2	1/4	1/8

¹ From the clinical facilities and research laboratory of the Research Division, Central Islip State Hospital, Central Islip, N. Y.

² The ion-exchange paper was supplied through the courtesy of H. Reeve Angel & Co., Inc., 52 Duane St., New York, N. Y.

obtained gives the "approximate minimum detectable quantity" (AMD). Several observed values are listed as follows :

Drug	AMD mg./ml.
Thorazine	.031
Sparine	.015
Compazine	.031
Vesprin	.031
Pacatal	.031

The approximate amount present is calculated by the equation :

$2^n \times \text{AMD} = \text{quantity present.}$

Where n=# of the tube in 1:1 dilution series

AMD=Approximate minimum detectable quantity.

CONCLUSIONS

This test has several advantages over

the Forrest Method. The color developed is fairly stable, with only slight fading observed in 24 hours. As little as one drop of sample is sufficient for grading the quantity of phenothiazine present. Therefore, the test can be used with samples from incontinent patients. A close estimation of overdoses can be made. The test retains the good qualities of the Forrest Method : it is rapid, sensitive and does not give false positives. All the phenothiazines tested gave positive results when the dose level was above 50 mg. daily.

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AMINO-GLUTETHIMIDE IN THE TREATMENT OF CHRONIC PSYCHOTIC EPILEPTICS

G. DONALD NISWANDER, M.D. AND ISMET KARACAN, M.D.¹

A glutarimide derivative, glutethimide, known for its sedative properties, was observed to have an additional anti-convulsant activity when used in the treatment of epileptic patients(1). Consequently, attempts were made to find other glutarimides with anti-convulsant activity, but without sedative effects. A compound, known chemically as a-(p-amino-phenyl)-a-ethyl glutarimide, hereafter referred to as amino-glutethimide,² was discovered to have a good anti-convulsant activity without the sedative side effect.

Lambros has previously reported his experience with amino-glutethimide in a group of epileptics treated as outpatients (2). Eighty per cent of Lambros' patients improved, in terms of a decrease in number of seizures while receiving the medication. Sheehan has mentioned his experience with

this compound, but he does not give results obtained with it(3).

Below are the results of 9 months experience and observations in the use of amino-glutethimide for the treatment of chronic hospitalized psychotic epileptic patients.

METHOD OF STUDY

Twenty-five female and 13 male patients were selected on the basis of the diagnosis "chronic brain syndrome associated with convulsive disorder, with psychotic reaction." Age range was from 25 to 76 years, with a median age of 40 years. The duration of hospitalization extended from 4 to 35 years, with a median duration of 10 years. Each of the patients was receiving either phenobarbital or diphenylhydantoin alone or in combination previous to the study. Initially each patient was given either 125 mgs. or 250 mgs. of amino-glutethimide daily. This dosage was increased by this same amount every 5 days until a therapeutic level of the drug was reached of between 750-2,000 mgs. daily. When amino-

¹ Arthur P. Noyes Institute for Neuropsychiatric Research, New Hampshire State Hosp., Concord, N. H.

² The amino-glutethimide used in this study was supplied as Elipten by the Ciba Pharmaceutical Products, Inc., Summit, N. J.

glutethimide was prescribed, the other anti-convulsants were gradually withdrawn over a 4 week period. Blood pressures, blood counts, and urinalyses were evaluated periodically during the study. Grand mal seizure frequency had been carefully recorded before the study, and this was continued during the experiment.

RESULTS

The withdrawal of previous anti-convulsant medications after prescribing amino-glutethimide was successfully carried out in all but one female patient, who developed status epilepticus. After this condition was controlled, the compound, in combination with the previous medication, was re-prescribed resulting in fewer seizures. In other patients who had more seizures, the diphenylhydantoin sodium and/or phenobarbital sodium were re-prescribed in reduced dosage levels with better seizure control.

In regard to control of grand-mal seizure frequency, amino-glutethimide is an effective anti-convulsive medication, used either alone or in combination with other anti-convulsants.

In the last 5 months of the study, after stabilization of this epileptic group, grand-mal seizures were reduced 25-35% compared to seizure frequency before the project began.

At the beginning of the study, 2 patients

(5.3%) developed a macular rash which was more prominent on the extremities. The rash disappeared within 4 days after the medication was discontinued. Each of these patients had begun receiving 250 mgs. of the compound daily, which had been increased 250 mgs. on the fifth day. None of the patients who initially started on the smaller dosage of 125 mgs. developed a rash. In view of this observation, patients added to the study thereafter were started on the smaller dosage; no further skin reactions have occurred.

Two patients receiving 1,500 mgs. of amino-glutethimide daily complained of nausea. Two patients receiving this amount of the drug were observed to have a staggering gait and unsteadiness while standing. When the dosage was reduced to 750 mgs. all of these symptoms subsided. These side effects from amino-glutethimide observed in this study are in accordance with what other investigators have reported. Drowsiness was not observed as a side effect. No significant changes were found in blood pressures, urinalyses, and blood counts.

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CHEMOTHERAPEUTIC TRIALS IN PSYCHOSIS : III. ADDENDUM 2-Brom-d-Lysergic Acid Diethylamide (BOL)

WM. J. TURNER, M.D., MANUEL ALMUDEVAR, M.D., AND
SIDNEY MERLIS, M.D.¹

In a previous communication(1) we have reported : "BOL-148 administered to chronic schizophrenics, 1 mg. t.i.d. to 6 subjects for 2 weeks, or 5 mg. q.i.d. for 3 days to 3 subjects, had no evident effect on their psychoses." Subsequently the work of Schneekloth, Page, del Greco and Corcoran(2) led us to consider whether we had used doses too small to demonstrate any therapeutic action. Accordingly, 6 schizophrenic women were included in a

further study. These patients had been on our Research Ward for periods up to 18 months. With each of them we had excellent rapport, and the transference reactions of dependency, and their expectation that they would be saved was quite clear. Three of them were known to be hallucinating most of the time. All had extreme feelings of guilt and were withdrawn except under favorable situations, with a person to whom they had become attached.

Each subject received a dose of LSD, 75 gamma, preceding the start of BOL

¹ Research Division, Central Islip State Hospital, Central Islip, N. Y.

medication. The LSD clearly brought out in each instance a psychic disturbance, with agitation, anxiety with exacerbation of the helpless dependency needs, or defensive hostility. Their experiences were described in such terms as "inability to stop memories," "something happening to me," or: "What was in that glass? I can't think right."

All patients were started on 10 mg. of BOL 3 times a day.² One patient had such a degree of alarm and agitation on this dose that she was reduced to 1 mg. daily for the first week. Several of the other patients commented on the fact that the first morning dose made them feel very jumpy and rather fearful that they might break down, for instance, from a "cool, distant reserve." Medication continued for a minimum of 4 weeks; 2 patients continued for 5 weeks. On their last day 4 of the patients received 1 mg. of BOL plus 150 or 200 gamma of LSD. The other 2 patients had no BOL for 18 hours preceding LSD 150 gamma and 200 gamma respectively. In all 6 instances the response to LSD was completely absent.

Interviews, observations of behavior and subsequent descriptions by 4 of the patients confirmed our impression that no change in attitude had taken place under the action of BOL. Hallucinations, when present before, were of the same intensity and quality at the end of the BOL experience. Hostile aloofness, anxiety, withdrawal, feelings of hopelessness, of injustice, of ultimate submissiveness, of bewilderment and perplexity, all remained unchanged.

COMMENT

The work here reported is part of our effort to clarify and if possible to define the role of biochemical factors in the pathogenesis of schizophrenias. One aspect of this is a widely accepted assertion that LSD produces a "model psychosis," a model, so to speak, of schizophrenia. In the face of the data which have been published in support of this assertion our limited data and personal experiences must carry little weight but, for what it is worth, we do not agree. Some of our reasons have been stated by or are implicit in the data

of other workers (Hoch(4), Levin(5), Stoll(6), Bleuler(7)). To these we would add one not previously reported, to our knowledge: our patients who were able to communicate told us that the LSD experience was not the same as their psychotic experience.

It might be objected that we have not shown conclusively that the LSD reaction was completely blocked. The difficulties in doing a formal study of psychotic subjects under LSD are well known. The rarity with which the psychotic subject reports the visual disturbances which play so prominent a part in the reaction of non-psychotic subjects is also well known. When these difficulties are combined, we feel that the best means of testing the LSD reaction is to compare one patient with herself at different times. Since we have done this, we believe that we are justified in claiming that the reaction to as much as 200 gamma of LSD was completely blocked by BOL. It is of theoretical importance that the abolition of the LSD reaction may occur without interfering with the patient's pre-existing psychosis.

SUMMARY AND CONCLUSIONS

BOL in doses of 10 mg. orally 3 times daily for 4 to 5 weeks was administered to 6 chronically ill schizophrenic women. This abolished the response to LSD up to 200 gamma but failed to alter the psychosis in any way. Initial doses of 10 mg. BOL may produce mild LSD-like reactions.

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² The BOL tablets were provided through the courtesy of Dr. R. Bircher of Sandoz Pharmaceuticals.

COMMENT

STATISTICS AND STATISTICIANS : A TIMELY WARNING

WERNER TUTEUR, M.D.¹

Scientific claims should be judged on experimental evidence rather than on plausibility and conformity, Hopkins warned recently. He added that the practitioner of psychiatry is leaning on a weak reed if he depends merely on the findings of specialized research workers. Psychiatric research, he states, is starving to death for want of ideas, space, mature and well trained personnel(1).

Statistics, euphemistically considered reliable sources of information, may at times be confirming, confusing or misleading. New methods of treatment usually are evaluated with "true statistical facts," allegedly proving the point in question. Frequently one is deluged by numerical data of clinical studies, most of them, no doubt, representing well motivated and honest work, many showing the most sophisticated and elaborate detail. At such occasions one does well to remember some examples of basic fallacies inherent in statistics and statisticians. They show how loosely certain concepts can be used and the false security on which conclusions are sometimes based.

For many decades it has become a popular slogan that every other hospital bed in the United States is occupied by a mental patient. This is perfectly true for a given day in the calendar year, but it does not mean that mental illness prevails among half of all hospitalized patients. Many are the times when one hears this "every other bed" slogan during campaigns, lectures and addresses by lay persons as well as those belonging to our ranks. The fact is frequently overlooked that the same general hospital bed is used throughout the year by a large number of patients with physical illness, that the general hospital turnover in no way compares with that of a mental hospital and that thus the general distribution of morbidity is entirely removed from the fact that "half of all hospital patients are mental cases."

Per diem rates prevailing in State and Government operated institutions are a favorite subject regarding "better care for the mentally ill." Easily the conclusion is reached by the uncritical that the agency showing the highest *per diem* rate gives the best and the one with the lowest, the worst, care to its patients. Completely overlooked is usually the fact that *per diem* rates by necessity are derived from the most varying basic circumstances. At the Ninth Mental Hospital Institute held at Cleveland, Ohio, this subject created a lively discussion headed by Blasko(2). Among many other issues the following highlighted the debate. States located in moderate climates spend little on fuel, while those exposed to inclement weather sometimes do so in excess. Food prices vary from state to state and are to a large measure dependent on the market value of home grown products, rendering the *per diem* rate low. Union wages for crafts vary across the entire country, once more introducing a variable into the *per diem* rate which has absolutely no bearing on psychiatric care.

Much inaccuracy prevails statistically on the matter of suicides. The drop of suicides during wartime is allegedly an "established fact." Evidence shows that this is erroneous. Raines speaks of concealed suicides occurring in the Armed Forces during war(3). The unaccounted number and the unknown motivations of men volunteering for dangerous missions, almost always representing a great risk of death and ending fatally, falls into this category. Or, soldiers landing on a beachhead walking into a mine field and promptly being blown apart, ignoring warning signs "as large as box cars," likewise seem to indicate successful suicidal attempts never covered statistically.

The very interesting phenomenon of physiological suicide(3) escapes statistical evaluation completely. Here belong hitherto well balanced diabetics who wilfully become unmanageable, slip into coma or

¹ Clinical Director, Elgin State Hospital, Elgin, Ill.

shock to die, cardiovascular patients who discontinue their medicinal regimen and become otherwise uncooperative with the overt or covert wish to die, and many others.

These are only a few examples of statistical looseness, of poorly disciplined and faulty thinking, leading to erroneous conclusions. Such thinking makes for scientific detours, for inaccuracy, of which psychiatry is replete already, since human data *per se* are qualitative, frequently sparse and mostly subjective. To this should be added the physiological margin of error inherent in most clinical work, rarely mentioned public-

ly, for which allowance is hardly ever made. Only after diligent filtering will statistics—without which we could not do—avail themselves for proper interpretation.

"I respect faith, but it is doubt that gets you an education" was said once by Wilson Mizner.

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EDUCATION

Education, in short, cannot be better described than by calling it *the organization of acquired habits of conduct and tendencies to behavior.*

—WILLIAM JAMES

VERITAS

Marxism a science ? I don't know a movement more self-centered and further removed from the facts than Marxism. Every one is worried only about proving himself in practical matters, and as for the men in power, they are so anxious to establish the myth of their infallibility that they do their utmost to ignore the truth.

—PASTERNAK
(Dr. Zhivago)

CORRESPONDENCE

DR. SAMUEL W. HAMILTON AND THE FOUNDING OF THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : In the March issue of the American Journal of Psychiatry I was interested in reading the article on "The Founding of the American Board of Psychiatry and Neurology," established as a result of the conference held under the auspices of the Division of Psychiatric Education of The National Committee for Mental Hygiene, Inc. (now The National Association for Mental Health, Inc.).

There is one name missing among those credited with the preparatory work of this Board, and if the authors (and the readers, too) were not aware of his participation it was due, I am sure, to his self-effacement. That person was the late Dr. Samuel W. Hamilton.

In 1933 at the time preparations were being made to call this conference, Dr. Hamilton was the Acting Director of the Division of Psychiatric Education of The National Committee for Mental Hygiene. It was he who gathered the directories of the medical specialty boards then in existence as sam-

ples and prepared the materials used in the discussions at the Boston conference in May, 1933. It was he, too, who made the arrangements for this conference and invited the participants.

Perhaps one should mention also, in this connection, the late Paul O. Komora (Assistant Secretary of The National Committee for Mental Hygiene), who for 25 years worked closely with the American Psychiatric Association on various projects and was present at the first conference on psychiatric education, at which the desirability of the establishment of a specialty board in psychiatry and neurology was discussed. To Mr. Komora we are indebted for the excellent report of that meeting which is listed in the references at the end of the article "The Founding of the American Board of Psychiatry and Neurology."

Emily L. Martin,
(formerly Executive Secretary,
Division of Psychiatry Education,
The National Committee for
Mental Hygiene, Inc.)

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : On behalf of my co-authors I wish to make amends for the oversight in omitting the name of Dr. Samuel W. Hamilton from those who contributed to the founding of the American Board of Psychiatry and Neurology.

None of us attended the important Conference on Psychiatric Education May 28

and 29, 1933, but Dr. Hamilton's remarks upon that occasion brought the whole problem into focus. We are gratified that Miss Martin has brought Dr. Hamilton's contribution to the notice of both ourselves and of the readers of the American Journal of Psychiatry.

Walter Freeman, M.D.,
Los Altos, Calif.

HYPERTENSION DUE TO CHLORPROMAZINE

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : With reference to the case report entitled "Prolonged Hypotension due to Chlorpromazine" by Dr. W. J. Stanley, in the June 1959 issue of The American Journal of Psychiatry, I believe that another blood pressure reaction related to chlorpromazine treatment should be looked for because of its possible hazards. This reaction is hypertension following administration of chlorpromazine.

Dr. Nathan Beckenstein, Director of the Brooklyn State Hospital, informed me that a drastic rise in blood pressure has occurred in young, ordinarily normotensive, male patients approximately 4 hours subsequent to an intramuscular injection of as little as 50 mgm. of chlorpromazine. This apparent withdrawal type response was noted in studies done at the Brooklyn State Hospital some time ago.

Recently I have had occasion to treat a 62-year-old white married man with chlorpromazine by mouth for an involutional psychotic reaction. This patient had a

coronary occlusion several years before, had been a known hypertensive, and had suffered from angina pectoris until approximately 3 years prior to my seeing him. After he had improved considerably from psychotic symptoms, chlorpromazine (50 mgm. q.i.d.) was discontinued. Within the 24-hour period following, the patient became nauseated, and EKG showed recurrence of an arrhythmia. The internist who treated him reports that the patient was again placed on chlorpromazine with improvement of nausea and cardiac symptoms.

Dr. Beckenstein's experience, and mine with this patient, suggest that subsequent to the administration of chlorpromazine, a pronounced hypertension may occur which could be disastrous to those with pre-existent cardiovascular disease.

The purpose of this letter is to call this to the attention of those who may have similar observations or who desire to investigate the cardiovascular effects of chlorpromazine withdrawal.

Edward L. Pinney, Jr., M.D.,
Brooklyn, N. Y.

STYLE

Cultivate simplicity, Coleridge, or rather, I should say, banish elaborations ; for simplicity springs spontaneous from the heart, and carries into daylight its own modest buds and genuine, sweet, and dear flowers of expression.

—CHARLES LAMB
(in a letter to Coleridge Nov. 8, 1796.)

MATHEMATICS AND REALITY

In my opinion the answer to this question is briefly this : as far as the laws of mathematics refer to reality, they are not certain ; and as far as they are certain, they do not refer to reality.

—EINSTEIN

HISTORICAL NOTES

BI-CENTENARY OF THE BIRTH OF VINCENZO CHIARUGI (1749-1820) A PIONEER OF THE MODERN MENTAL HOSPITAL TREATMENT

GEORGE MORA, M.D.¹

The picture of psychiatry at the beginning of the 19th century, as described by Kraepelin in a little remembered, but significant book,² is very important. The verbal description and the pictorial reproduction of the methods of treatment in use at that time—from cruel strait jackets and other torture-like devices to isolation in filthy cells, from rotatory machines to complicated systems of sudden baths—leaves one today with a feeling of disgust and sadness. Yet, these methods were in use only a century and a half ago—and they had to continue through the first decades on the 19th century—at the time when a long tradition of Christian ethics and a more recent one of scientific progress had established their strongest roots in the Western European thought.

At the height of the Enlightenment, centuries after the fore-running modern view-

point on treatment of mental patients as expressed by Aretaeus and Soranus³—not to mention the Arabian humanitarian approach and the "Renaissance" psychiatry of Weyer⁴—at the time of the greatest enthusiasm for human knowledge, not only in the scientific but also in the "humanistic" fields, from medicine to sociology and jurisprudence, the general attitude toward mental patients was still characterized by mistrust, suspicion, horror, and cruelty. Others⁵ have attempted to clarify this unconscious fear toward mental patients, which accounts for such an irrational attitude, a fear which seems almost paradoxical at the time when rationalism prevailed.

Certainly, no matter how strong these prejudices dictated by fears must have been, some signs, harbinger of a new approach to mental diseases, were already present. The importance of "passions" for the understanding of human psychology, a concept introduced by Descartes in 1649, started to appear in some of the most important writings of physicians of the time,

¹ Director, Out-Patient Department, Bradley Hospital, East Providence, R. I.; Research Assistant, Department of the History of Medicine, Yale School of Medicine.

² E. Kraepelin: *Hundert Jahre Psychiatrie*, Berlin: Springer, 1918. Kraepelin summarizes the situation of psychiatry at the beginning of the 19th century in these terms: "Disregard for and crude treatment of the mentally sick, lack of appropriate physical facilities and medical care, uncertain and strange ideas on the causes and essence of insanity, torture of patients through meaningless and at times extravagant means of treatment. It would certainly be unfair to expect that the above mentioned factors could result in progressive developments. It is true that then and even earlier there were individual places in which patients were treated well and properly. There were even physicians who achieved a better understanding of mental disturbances by their rich experience and natural ability and who, endowed with a serene viewpoint and a warm approach, followed the right direction in the treatment of their patients. These exceptions alone, however, could not decisively influence the general state of scientific knowledge and the destiny of large masses. They were only the seeds, from which, under the most favourable circumstances, the science of psychiatry could develop in the following century." (p. 68)

³ Aretaeus and Soranus, both active in medicine toward the end of the first century A.D., introduced a very humanitarian approach in the treatment of mental diseases, as related by Caelius Aurelianus in his works *On Acute Diseases* and *On Chronic Diseases* (5th century A.D.).

⁴ Johann Weyer, or Wier (1515-1588), the most well known among a number of authors who fought the belief in witchcraft in the late 16th and early 17th centuries, wrote the important book *De prestigiis daemonum* in 1563. He is currently considered as the first pioneer of psychiatry. The humanitarian approach to mental diseases, as applied in some Islamic countries around the 15th century, still remains largely unknown today. It contains many elements, however, similar to those pursued by modern psychiatry, as can be seen in the recent study by J. E. Stahelin: *Zur Geschichte der Psychiatrie des Islams*, Schweiz. med. Wchnschr., 87: 1152, 1957.

⁵ G. Zilboorg, *A History of Medical Psychology*, New York: Norton, 1941, passim; A. Gregg: *A critique of psychiatry*, Am. J. Psychiat., 101: 285, 1944.

from George Stahl (1702) to Boissier de Sauvages (1771) and Clément Tissot (1798).⁶ Parallel to a timid pre-romantic trend in the 18th century philosophy and literature, an initial trend toward a more comprehensive attitude toward human beings, even in their irrational expressions, began to manifest itself sporadically in the vast, and cold, nosographic structures of medical writers.⁷ The synthetic effort evident in the all-comprehensive medical and philosophical systems of the 18th century could not completely overshadow a genuine interest for the individual and his problems.

This trend was also present in psychiatry, where some isolated individuals—under the influence of the English philosophy and of the French Enlightenment—started to question the validity of the cruel treatment to mental patients. While the need for reforming the treatment to mental patients was strongly expressed by Jacques Tenon (1788) and by Jean Colomblie (1789), a more humanitarian, but still pre-scientific approach toward mental diseases was already applied at the Charité de Senlis in Paris,⁸ as well as in similar places. So far, however, official medicine had remained absent from this movement. Strangely enough, the first decisive step toward a scientific reform in psychiatry occurred in Italy, a less progressive and “enlightened” country than France and England.

The evaluation of the cultural situation of the 18th century European countries is a matter of recent investigation, as such an evaluation has been traditionally limited to France and England. The general characteristics of Italian Enlightenment, essentially an integration of the cultural movement by the political absolutistic element with emphasis on concrete and practi-

cal aspects, have been brought into focus only recently. Of the several states in which Italy was divided in the second half of the 18th century, these renewing currents were especially evident in Lombardy in the field of public administration, in the kingdom of Naples in the field of jurisprudence and economy, and in Tuscany in the field of politics and social welfare. It is especially to the cultural scene of Tuscany during the rule of the Grand Duke Pietro Leopoldo (1747-1792), that modern historians have turned their attention. The importance of the series of reforms affecting all the areas of the state's life, economic, financial, judicial, educational and social during his 25 years of ruling, from 1765 to 1790, have been emphasized by many.

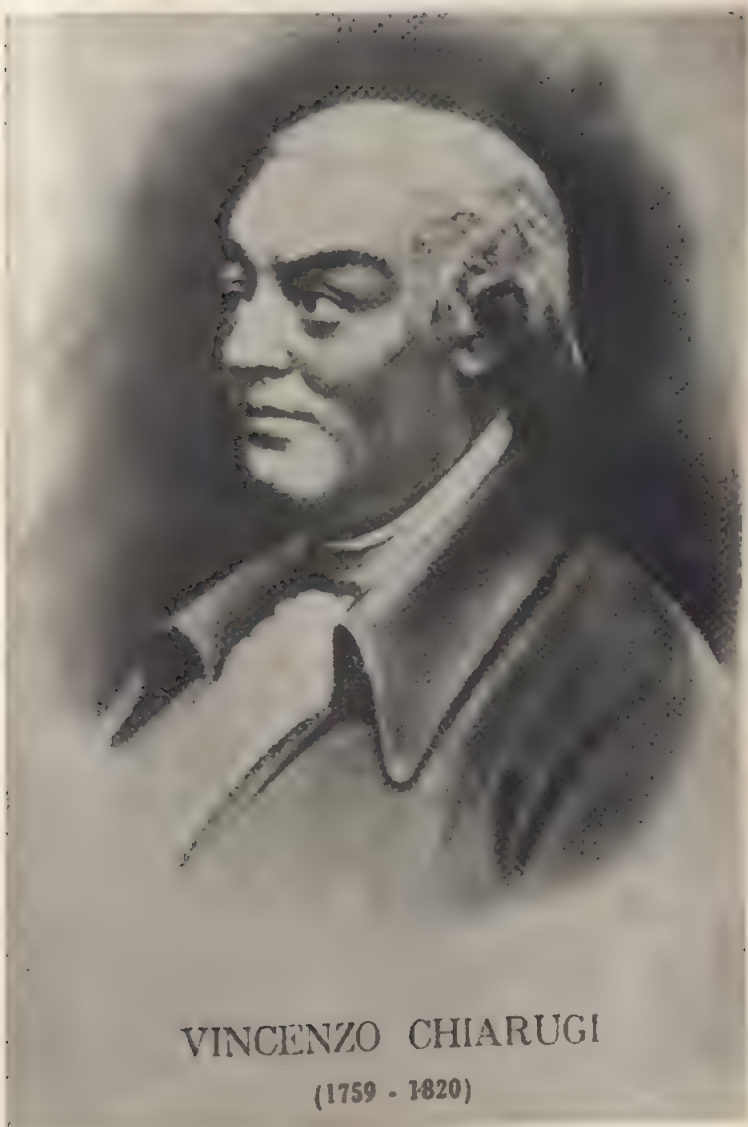
A chemist himself, Leopold was a fervent admirer of the social ideas brought to Italy by the English and French Enlightenment. He introduced the *Encyclopédie* in Italy in 1758, permitted the publication of important social and legal works (such as Cesare Beccaria's *On Crime and Punishment*),⁹ and surrounded himself with scientists and skillful physicians who brought reputation to the universities of Pisa and Florence, in line with the tradition inaugurated by Galileo two centuries before. As a completion of such an important program of reforms, the Grand Duke Leopold and his collaborators elaborated in detail a project for a political constitution—similar in its general philosophy to the first Constitution of Virginia of 1776—which unfortunately could not be put into effect because of the departure of the Grand Duke for Vienna to become emperor in 1790. Even admitting that such a project was far above the capacity of comprehension of the population so to raise opposition rather than support, the judgment of the historians is unanimous in indicating in Pietro Leopoldo the most progressive ruler that Italy ever had and in his peaceful reforms the application of the democratic principles which had to wait for 30 years more—after the horrors of the French revolu-

⁶ George Stahl (1660-1734), Boissier de Sauvages (1706-1767) and Clément Tissot (1750-1826), well known physicians of their time, all emphasized the influence of emotions on mental and physical diseases, anticipating many views presented later.

⁷ Among the attempts to classify physical as well as mental diseases in a comprehensive system, the most important remain those by Boissier de Sauvages (*Nosologie methodique*, 1771), by William Cullen (*First Lines of the Practice of Physick*, 1777 and *Treatise of the Materia Medica*, 1789), and by Erasmus Darwin (*Zoonomia*, 1794).

⁸ H. Bonnafous-Sérieux: *La Charité de Senlis*, Paris, Presses Univ. de France, 1936.

⁹ Cesare Beccaria (1738-1794) acquired an international renown through his work *On Crime and Punishment* (1764), translated in many languages, in which he made a plea for moderating punishments and for abolishing confiscation, torture and capital punishment.



VINCENZO CHIARUGI

(1759 - 1820)

tion—to be finally formulated in the French constitution.

Among the decisions taken by the Grand Duke were the abolition of the torture and death penalty for severe offenses, which culminated in the public destruction of the torture tools in 1782, and the foundation of a special institution for the rehabilitation of juvenile delinquents. An event even more important than these, but unfortunately almost universally overlooked by historians, is the foundation of the Hospital Bonifacio in Florence in 1788, entirely dedicated to the care and treatment of about 125 mental patients.

Vincenzo Chiarugi, a brilliant young physician, born near Florence in 1759, and graduated from Pisa in 1780, was put in charge of this new hospital. The following year, 1789, Chiarugi published the *Regulations of the Hospital Bonifacio*, which contain the foundations for the treatment of mental patients and which anticipated the philosophy of "moral treatment" of the following decades in Europe as well as in this country.¹⁰ On the basis of the experience accumulated in some years of intensive work at the hospital, Chiarugi published in 1793-1794 his main work, in 3 volumes, *On Insanity*, which constitutes today a very rare bibliographical item.¹¹ Following this, in 1802, he was appointed professor of dermatology and mental diseases at the newly established medical school of Florence, and later on he became professor of physiology, pathology and materia medica. He died in 1820.

In his work *On Insanity* Chiarugi makes a strong plea against the old belief concerning mental diseases as due to possession

by evil spirits and tries to base his statements only on scientific observations. The psychological foundations of the individual are still largely based on a combination of Aristotelian-tomistic philosophy with cartesianism, a view which he supports by following many students of the nervous system of the 16th and 17th centuries. In spite of the fact that passions are given importance ("between passions and insanity there is only a difference of degree and duration"), he considers insanity as an "impairment of the physical structure of the brain." As a true follower of Morgagni, each case described contains a summary of the history, of the clinical manifestations and at times of the pathological findings.

He presents a division of insanity in three major categories: (a) melancholia (b) mania (c) amentia, a classification which was essentially followed in other books, including Pinel's treatise. *Melancholia* (true, false, or violent) is characterized by "fixation of the mind on one or a few distorted ideas, while the other intellectual functions remain untouched." *Mania* is "a generalized insanity accompanied by violent and impetuous actions." *Dementia* (congenital or acquired) "is general insanity characterized by abnormal actions of both the intellect and the will, performed without any show of emotions."

Many factors both congenital and acquired are considered either as predisposing or precipitating causes of insanity, but large emphasis is also given to environmental factors. "As man's natural disposition is to imitate the actions of his associates, through education a man's character is molded, his senses develop and even his inclinations may be modified."

As far as diagnosis is concerned, "in describing the nature of insanity in general, one must first have an idea of what the essential elements are and consider the external signs and the general phenomena which accompany it." And later "there is a considerable change in the instincts and personality of a mentally ill person." Furthermore, he emphasizes the value of a careful description of the physical and emotional aspects of the patient's personality, and insists on the manic-depressive course of many psychiatric conditions.

In discussing prognosis, he states that

¹⁰ According to the historian Antonio Zobi (*Storia civile della Toscana*, Firenze, Molini, 1850, vol. 2, p. 324) these *Regulations* served as an example to improve the condition of other mental hospitals in different countries.

¹¹ The full title of this work is: *Della pazzia in genere e in specie con una centuria di osservazioni* (*Medical Treatise on Insanity, with one hundred observations*), Firenze, Carlieri, 1793-1794, 3 vols.; 2nd. ed. Firenze, Pagani, 1808. This work soon appeared in German under the title: *Abhandlung ueber den Wahnsinn ueberhaupt und insbesondere nebst einer Zeanturie von Beobachtungen*, Leipzig, 1795. Only 2 copies of the original Italian first edition are known in this country, one at the National Library in Cleveland and the other at the Yale Medical Library.

long term conditions, especially if combined with badly regulated education, have a more unfavorable outcome than conditions due to acute or physical causes.

Chiarugi's main contribution to psychiatry remains, however, in the treatment of mental diseases. After mentioning the importance of diet, of drugs, and the favourable effects of music on certain conditions, Chiarugi formulated in detail the *principles of hospital care and treatment* both in the "Regulations of the Hospital Bonifacio" and later on in his book *On Insanity*. These are the main points of his philosophy: Patients are to be admitted to the hospital only after a careful history has been obtained; a physician has to be on duty in the hospital at all times; under no circumstance should force be used on patients; temporary restriction methods are limited to the use of strait jackets and strips of reinforced cotton cloth, so as not to interfere with the patient's blood circulation; special precautions are to be taken in regard to furniture and other supplies, so as to prevent injuries; the hygienic conditions of the institution have to conform to certain basic requirements; activities for patients are to be encouraged, though only under the supervision of the physician.

As far as direct or "moral" treatment is concerned:

It is a supreme moral duty and medical obligation to respect the insane individual as a person. It is especially necessary for the person who treats the mental patient to gain his confidence and trust. It is best, therefore, to be tactful and understanding and to try to lead the patient to the truth and to instill reason into him little by little, in a kind way.

Later on:

The attitude of nurses and doctors must be authoritative and impressive, but at the same time pleasant and adapted to the impaired mind of the patient. Generally, it is better to follow the patient's inclinations and give him as many comforts as is advisable from a medical and practical standpoint.

Clearly as results from the above mentioned, Chiarugi anticipated both in theory and practice the scientific views and the reform later introduced by Pinel and his

followers in the field of mental diseases.¹² A striking similarity in both precursors, Chiarugi and Pinel, is indicated by the fact that their reforms of the treatment of mental patients could succeed only in an atmosphere of social progress and of political freedom, such as in Tuscany in the late 18th century and in France after the revolution.¹³ There is no knowledge of any other all-comprehensive and well integrated approach to mental patients previous to that of Chiarugi, so that his work constitutes a definite landmark in the history of psychiatry. It is unfortunate that statistical figures concerning the patients treated at the Hospital Bonifacio are not available and that Chiarugi's work remained interrupted at his death by a lack of a successor. Even more unfortunate is the fact that Chiarugi's name was soon forgotten in the midst of the political turmoil created by the wars of independence in Italy during the past century and that his book, written in a language not known to many, remained virtually inaccessible to many. As shown by the well-documented studies by E. Padovani¹⁴ and G. Mora,¹⁵ Chiarugi's reform was largely overlooked not only in this country, but even in Italy, by psychiatrists as well as by medical historians, up until the beginning of this century. The re-evaluation of Chiarugi's work, antedated by a famous polemic article by C. Livì in

¹² In the historical introduction to his *Traité médico-philosophique* (1801), Pinel passed a very harsh and unjust judgment on Chiarugi's work. Unfortunately, such a judgment was uncritically repeated by later psychiatrists. Actually, the similarities between the two works of Chiarugi and Pinel are striking, especially in regard to the classification of mental diseases and to the treatment of mental patients.

¹³ This consideration could be extended also to this country, where the reform of the treatment of mental patients, as introduced by Benjamin Rush and others at the beginning of the 19th century, coincided with a reform movement of the whole social life of the nation. See: A. Deutsch: *The Mentally Ill in America*, New York: Doubleday, 1937, especially Chaps. 5 and 6.

¹⁴ E. Padovani, *Pinel e il rinnovamento dell'assistenza agli alienati . . .*, Giorn. psichiatr. e neuropat., 55: 69, 1927.

¹⁵ G. Mora, Vincenzo Chiarugi (1759-1820). His contribution to psychiatry. Bull. Isaac Ray Med. Libr., 2: 50, 1954.

1864,¹⁶ officially began at the beginning of this century with the description of Chiarugi's approach to mental diseases by S. Kornfeld,¹⁷ and was followed by the beautiful essay by A. Vedrani¹⁸ and more recently

by the above-mentioned studies by E. Padovani and G. Mora. Beside this, Chiarugi's work has been recently the subject of a number of less important articles or of simple mention by some psychiatrists and medical historians. Today, at two centuries from his birth, Chiarugi's reform should be rightly commemorated as the beginning of a new era in psychiatry and his name should be given a proper place in the history of psychiatry.

¹⁶ C. Livi, Pinel o Chiarugi? newspaper *La Nazione* (Florence), 1864. This paper was re-published several times during the last century in the Italian literature. An English translation of this paper by J. Workman appeared under the title "Life of Chiarugi," *Alienist and Neurologist*, 3, 93, 1882.

¹⁷ S. Kornfeld, *Geschichte der Psychiatrie*, in Th. Puschmann's *Handbuch der Geschichte der Medizin*, Jena, Fischer, 1905, vol. 3, p. 639.

¹⁸ A. Vedrani, Vincenzo Chiarugi, in *Gli uomini italiani dall'inizio del medio evo ai nostri giorni*, Roma, 1923, vol. 1, p. 40-44.

PROCEEDINGS OF THE AMERICAN PSYCHIATRIC ASSOCIATION

THE ONE HUNDRED AND FIFTEENTH ANNUAL MEETING PHILADELPHIA, PENNSYLVANIA, 1959

The 155th Annual Meeting was held in Philadelphia, Pennsylvania, April 27-May 1, 1959, with headquarters at the Bellevue Stratford Hotel and business meetings and scientific sessions at the Trade and Convention Center. The opening meeting was called to order by Dr. Francis J. Gerty, President, at 9:00 a.m., on April 27. The Right Reverend William P. Roberts, D.D., former Bishop of Shanghai, delivered the Invocation; His Honor, Richardson Dilworth, Mayor of Philadelphia, gave a welcoming address to the members, followed by the introduction of Dr. William Malamud, the President-Elect, by Dr. Gerty. Dr. Mathew Ross, Medical Director, was called upon to give his first report to the membership since assuming this position. He spoke on the importance of continuing to improve methods of communication within the Association, on his plans for becoming acquainted with more of the membership, and on activities of the Central Office. Dr. Walter Obenauf, Speaker of the Assembly of District Branches, presented his report noting the enlarging scope and responsibility of the District Branches in the activities of the Association. Dr. Theodore L. Dehne, who served as Co-Chairman with Dr. Lauren Smith for the Arrangements Committee, spoke regarding the work of this Committee in handling preparations for the Annual Meeting. In his report as Chairman of the Program Committee, Dr. John Donnelly announced various aspects of the Program of special interest and stated that 174 scientific papers and 26 Round Tables composed the Program for this meeting. Dr. Lawrence C. Kolb, who had been elected by Council to the position of Secretary Pro Tempore due to the illness of the Secretary, Dr. C. H. Hardin Branch, reported that the official membership count on March 31, 1959 was 10,420. The Treasurer, Dr. Robert H. Felix, then reported

on the financial standing of the Association at the end of the fiscal year on March 31, 1959.

The Chairman of the Hofheimer Prize Board, Dr. John Nurnberger, announced that the Association's \$1,500 prize was presented this year to Irving L. Janis, Ph.D., for his research work published as "Psychological Stress: Psychoanalytic and Behavioral Studies of Surgical Patients." The 1959 recipient of the Isaac Ray Award was Dr. Maxwell Jones, the well-known British psychiatrist, who will present a series of lectures on psychiatry and the law during the coming academic year at the George Washington University in Washington, D. C. Dr. Ross announced the Nebraska Psychiatric Institute as the winner of the 1958 Mental Hospital Service Achievement Award. Honorable mention was also accorded to the Minnesota Department of Public Welfare, St. Paul, Minn., the New Jersey Neuropsychiatric Institute, Princeton, N. J., and Osawatomie State Hospital, Osawatomie, Kan. Recommendations of the Membership Committee, as approved by Council, on applications for election to membership and for changes in membership status were formally presented to the membership for vote and, on motion duly seconded, were approved as presented.

Dr. Malamud then introduced Dr. Gerty who presented his Presidential Address entitled "The Physician and Psychotherapy" in which he provided a careful analysis of the concept of psychotherapy and its place as a treatment method in medicine, including the role of the psychologist in relation to psychotherapy. Dr. Malamud was respondent. Immediately following this address, the session observed a moment of silence in memory of those members of the Association who had died since the 1958 Annual Meeting. Dr. Kenneth Appel then read a Memorial to the late Past-President

Edward A. Strecker.

The second business session was called to order by Dr. Gerty on Tuesday, April 28, at 2:00 p.m. The first item of business was a report of the results of the election of officers for 1959-60. The successful candidates were announced by Dr. John E. Davis of the Board of Tellers as follows: Dr. Robert H. Felix, president-elect; Dr. S. Spafford Ackerly, vice-president; Dr. Franklin Ebaugh, vice-president; Dr. C. H. Hardin Branch, secretary; Dr. Addison M. Duval, treasurer; incoming Councillors: Dr. Calvin Drayer, Dr. Paul Hoch, and Dr. Aldwyn B. Stokes.

Reports were presented by the Coordinating Committee Chairmen reviewing the activities of their respective groups of committees during the past year and plans for the future. Dr. Frank Curran, Chairman, reported for the Coordinating Committee on Technical Aspects of Psychiatry; Dr. Wilfred Bloomberg reported as Chairman of the Coordinating Committee on Professional Standards; and Dr. Paul Lemkau, as Chairman of the Coordinating Committee on Community Aspects of Psychiatry. Dr. Lawrence C. Kolb, Secretary Pro Tempore, then read a series of proposed amendments to the Constitution and By-Laws regarding membership in District Branches. These amendments will be presented to the membership for final consideration on the next annual ballot.

Following the completion of the business meeting, Dr. Gerty presided over the annual Convocation for newly elected Fellows at 3:00 p.m. with Drs. Lauren H. Smith and Theodore L. Dehne serving as Grand Marshals. Dr. Karl Menninger delivered the Fellowship Lecture (Academic Lecture) on "Hope," a thoughtful and stimulating examination of this powerful tool in the doctor-patient relationship.

The next business session was opened at 9:30 a.m. on Wednesday morning, April 29, by Dr. Gerty. Dr. Kolb presented the report of the Secretary outlining the major actions of the Council since the last Annual Meeting. On motion duly seconded from the floor, these matters were approved by the membership. By separate motions, Atlantic City was approved as the site of

the 1960 Annual Meeting and the Santa Clara-Monterey Psychiatry Society was approved as an Affiliate Society of the Association. Dr. Gerty then read the names of Officers, Councillors, and Committee Chairmen retiring from office at this Annual Meeting and announced that each would receive a Certificate in recognition of his service to the Association.

The Annual Dinner was held on Wednesday evening at 7:30 in the Ballroom of the Bellevue Stratford Hotel. Dr. Gerty introduced various APA officials and their wives as well as representatives of other national organizations and foreign guests. The Past-President Badge was presented to Dr. Gerty by Dr. Francis J. Braceland. The dinner was followed by dancing until 1 a.m.

The Adolf Meyer Memorial Lecture, another highlight of the meeting, was presented at 9:30 a.m. on Thursday morning. Dr. Grey Walter, head of the Physiological Department at Burden Neuropsychiatric Institute in England, spoke on "Where Vital Things Happen" with Drs. Lawrence Kubie and Karl Pribram acting as discussants.

The final business session was held on Friday, May 1, at 9:00 a.m. At this time, the actions taken by the Council on April 30 were reported by the Secretary Pro Tempore, Dr. Kolb. These actions included the appointment of Dr. Paul E. Huston to fill the unexpired term on the Council of Dr. Addison M. Duval, the newly elected Treasurer, and the recommendation that the membership approve the Rhode Island District Branch as a District Branch of the APA. Both of these actions were approved, and the whole report was accepted by the membership upon motion from the floor. With the presentation of the gavel, Dr. William Malamud was formally installed as President of the Association for the coming year, and he announced the new Officers for the Assembly of District Branches: Dr. Alfred Auerback, Speaker; Dr. John R. Saunders, Speaker-Elect; and Dr. Lester Shapiro, Recorder. After a few brief remarks by the new President, this final session was adjourned. The 115th Annual Meeting was officially closed at 5:00 p.m. on May 1.

SUMMARY OF MEETINGS OF COUNCIL AND EXECUTIVE COMMITTEE, MAY 1958 TO MAY 1959

This report presents in summary form the principal actions of the Council and the Executive Committee at meetings held throughout the year. Many routine matters, such as referrals to Committees prior to definitive actions, are not included. Copies of the full minutes have been forwarded to the officers of each District Branch and Affiliate Society following the various meetings to keep their members informed of the matters that were considered and the action that resulted.

Executive Committee Meetings, June 28, and September 14, and October 31, 1958.

Approved the recommendations of the Committee on National Defense for Standards to be suggested to the Civil Aeronautics Administration (name changed to Federal Aviation Agency) regarding the physical and mental examination of applicants for licensure in civil aviation. Approved a sample certificate to be issued to hospitals inspected and approved by the Central Inspection Board. Approved the selection of the State of Illinois as the situs for the filing of the group insurance plan for APA members. Authorized the appointment of a committee to review the Psychiatric Research Fund and APA relations with it. Approved the continuation of the Smith, Kline and French Fellowship Committee for another 3 years. Approved a resolution presented by the Therapy Committee stating: "Whereas scopolamine, if used indiscriminately, can have deleterious effects, be it resolved that the APA recommends that compounds containing scopolamine be dispensed on medical prescription only." Requested that the President appoint a Commission to study the needs and policies representing the standards of the APA in research and treatment in psychiatry and appropriated \$7000 for interim financial arrangements for the Commission pending the November meeting of the Council. Recommended that an honorarium of \$250 be awarded annually to the Fellowship Lecturer (Academic Lecturer) beginning in 1959. Approved a plan to hold a meeting of State Mental Health Commissioners at the Mental Hos-

pital Institute at no cost to the APA. Authorized payment of bills incurred by the House Committee for renovation of the Central Office in excess of the original budget appropriation. Authorized the House Committee to proceed with the Dedication Ceremony for the Central Office in accordance with its preliminary plans. Authorized the Executive Assistant to sign grant applications submitted by the APA to the National Institute of Mental Health. Authorized the Committee on Disaster and Civil Defense to participate in a seminar on civil defense and disaster, and to seek funds from the Office of Defense and Civilian Mobilization to develop a training film in adjunct with the manuals published by the Committee. Appointed Dr. George Tarjan to the Council to fill the vacancy occasioned by the election of Dr. C. H. Hardin Branch to the office of Secretary. Reaffirmed its approval in principle of a proposed organization for Mental Hospital Personnel under APA auspices. Approved a letter of agreement with Dr. Daniel Blain covering his work with the Manpower Project. Directed that the management of APA funds be referred to the Medical Director and the Treasurer for study in consultation with the Chairman of the Budget Committee and the Executive Assistant. Approved in principle a booklet on mental health in industry prepared by the Committee on Industrial Psychiatry (subsequently renamed Committee on Occupational Psychiatry). Directed that the Committee on Certification of Mental Hospital Administrators be limited to a maximum of 7 members appointed for a 3-year term so staggered that approximately one-third will retire each year, that there should be no consultants to the Committee, and that the Chairman and Secretary be appointed on the same basis as other Committee members. Approved a schedule of regulations to govern reimbursable staff travel expenses as presented by the Executive Assistant. Directed that the Ethics Committee account should be rebudgeted so that a total of \$500 be placed at the immediate disposal of the Committee for

official expenses and authorized the Committee to submit a request for a supplemental appropriation if necessary. Authorized the appointment of 3 members of the Committee on Nomenclature and Statistics for a period of 2 years, following which the Committee will revert to its normal size of 6 members. Authorized the Ad Hoc Committee in Liaison with the Canadian Psychiatric Association to meet during the fall Committee meetings. Approved recommendations of the Ad Hoc Committee on Increasing Responsibilities of the APA governing joint meetings between APA Sections and outside organizations at the APA Annual Meeting. Expressed sincere appreciation to Dr. Hugh T. Carmichael for his statesmanship in negotiating with the Joint Commission on Accreditation of Hospitals and for his service to the cause of the hospitalized mentally ill in dealing with the problem of mental hospital accreditation. Authorized the Executive Assistant to negotiate for new quarters for the New York Office in accordance with his recommendation and to sign a 5-year lease for such space.

Council Meeting, November 21-22, 1958.

Approved the minutes for Council meeting of May 10, 11, and 15, 1958, as amended. Ratified the actions of the Executive Committee meetings of June 28, September 14, and October 31, 1958. Directed that the situation regarding the proposed Bond-Strecker-Appel Award should be clarified by the Treasurer writing to the attorney for the donor specifying the conditions under which the funds for this award can be accepted by the APA. Authorized the Medical Director to expend such funds in excess of the original budget allotment as are necessary to operate the Central Office economically during the remainder of the budget year. Accepted the proposed expenditures for salaries, the retirement fund, rent for the New York Office, printing of APA publications, and maintenance of the Central Office as recommended by the Budget Committee. Accepted the request for an additional Editorial Assistant in the Mental Hospital Service. Accepted the request for authorization of increased rent for the New York Office. Approved the recommendation that the Medical Director

drop from the payroll temporary employees involved in projects terminating during the current fiscal year. Approved a request for a part-time administrative assistant for the Assembly. Did not approve, for the present time, a proposal to establish an active library at the Central Office. Approved the request for a contingency fund of \$20,000 for the President and the Council. Authorized the Budget Committee to resume its previous practice of preparing a final budget at its fall meeting for consideration by the Council in order to avoid a second meeting of the Committee. Accepted in principle the recommendations from the Commission on Long Term Policies concerning an early publication journal. Approved the current studies of the Commission on Long Term Policies and expressed hope that all will be worked out soon and brought before the Council in the near future. Approved the request of the Nominating Committee that a statement be printed in the Journal indicating the factors considered by the Committee in preparing the annual slate of Officers and Councillors. Directed that copies of all Nominating Committee reports be compiled for the information of subsequent Nominating Committees. Authorized members of the Commission on Principles and Position on Current Issues on Psychiatry to appear before Congress giving testimony to the best of their ability and knowledge with the advice of the total Commission and the APA Officers. Expressed complete confidence in the Commission with regard to possible testimony before Congress, and indicated that the use of the original \$7000 appropriation would be left to the discretion of the Commission in financing its activities. Requested Dr. George S. Stevenson to determine how other organizations deal with the matter of recognizing outstanding services by their members and asked that he bring a recommendation to the Executive Committee which would permit the Association to accord appropriate recognition to its outstanding members within constitutional limitations. Authorized the Medical Director to explore the possibility of incorporating the cost of psychiatric treatments into the Group Health Insurance plan in New York. Requested

the President to appoint an Ad Hoc Committee to investigate all aspects of insurance for APA members and directed that this Ad Hoc Committee develop a program of action for consideration by the Council. Viewed with sympathy the need for funds by the Central Inspection Board for the reinspection of hospitals but felt that it could not assume this responsibility. Expressed a vote of confidence to the Central Inspection Board, Dr. Gerty, and Dr. Hugh T. Carmichael for the fine work they are doing in relation to the situation regarding the Joint Commission on Accreditation of Hospitals. Approved the proposed amendments to the Constitution regarding membership as suggested by the Assembly: Article III, Section 3, and new Sections 12, 13, 14, and 15 of the Constitution and Article V, new Section 3 of the By-Laws. Approved the proposed amendments in Article V of the By-Laws involving proposed new Sections 1, 2, 4, 5, 6, and 7, as suggested by the Assembly, with an addition to new Section 2 to read, "A District Branch may elect as affiliates, physicians practicing or residing in its geographical area who are not eligible for membership in the Branch. Affiliates are not members and will be ineligible to vote or hold office in the Branch." Approved the recommendation of the Policy Committee that funds be authorized for circulation to the membership via the Mail Pouch of cogent portions of a letter from the American Psychological Association regarding the latter's position on certification for psychologists, together with an appropriate introductory paragraph. Approved the application of the Santa Clara-Monterey Psychiatric Society for Affiliate Society status and directed that it be presented to the membership for final vote. Approved in principle the recommendation of the Policy Committee for publication of proceedings of Divisional Meetings at no expense to the APA, with the APA Publications Department functioning in a manner similar to that now followed with respect to the Research Reports. Approved the recommendations by the Ad Hoc Committee on Education in Public Hospitals in Liaison with the American Psychoanalytic Association that the Central Office keep

on file a list of psychoanalysts who are willing to participate in an educational program in state hospitals, that this service be publicized in the Mail Pouch, the Journal, and Mental Hospitals, and that the Central Office take charge of carrying out this service. Approved the proposed standards for training in child psychiatry as recommended by the Committee on Child Psychiatry and the Committee on Medical Education. Approved the recommendations of the Committee on History of Psychiatry regarding the development of a library in the Central Office, the assembling of archives, records, transactions, and proceedings of the Association, and requested the Medical Director to seek funds for and initiate a research project on the historical development of contemporary American psychiatry. Recommended that the Budget Committee consider appropriating \$2500 to \$3000 for the purpose of beginning a collection of historical material for the Library in the Central Office. Approved the recommendation of the Committee on Medical Education that the *Descriptive Directory of Psychiatric Training in the United States and Canada*, published in 1955, be revised and reprinted on or about October 1960, and authorized the Central Office to carry out the necessary compilation of data and organization of the Directory with editorial assistance as to format, index, and length of descriptions by the Committee on Medical Education. Approved the unanimous sentiment expressed by the Committee on Medical Education that there is no present indication for action on the proposal for adoption of a uniform date of appointment for psychiatric residents, and that the present operation of methods of appointment permits a flexibility which is useful both to the training centers and to the men applying for training. Approved a statement submitted by the Committee on Medical Education regarding the importance of the Conference of the World Medical Association to be held in Chicago in the summer of 1959. Authorized the Committee on Therapy to collect data regarding the amount and type of psychotherapy being done with chronic schizophrenics including a questionnaire to pro-

vide information as to where such psychotherapy has been done. Approved the preparation of a statement by the Committee on Therapy which would endorse the recent statement by the American Medical Association concerning current problems related to hypnosis. Directed that the Committee on Therapy continue to consider the problem of hypnosis with special reference to those matters of particular interest to psychiatrists. Authorized the Committee of Standards and Policies to seek outside funds for a second Conference on Volunteers, the program to be initiated by the APA and co-sponsored by the American Hospital Association, the National Association for Mental Health, the American Red Cross, and the Veterans Administration. Directed that the Committee on Cooperation with Leisure Time Agencies re-submit its request for a change in name with a number of possible alternative names for consideration by Council. Approved the request of the Committee on National Defense that two additional sentences be included in the recommended Standards for the Civil Aeronautics Administration (Federal Aviation Agency) governing mental and physical examination of applicants for licensure in civil aviation. Approved a plan for publishing the proceedings of the Hawaiian Divisional Meeting as proposed by Dr. Alfred Auerback. Accepted the report of the Ethics Committee with thanks, approved the actions recommended by the Committee, and authorized the Chairman to notify each individual of the decision of the Committee in his particular case. Recorded its extreme pleasure with the manner in which the Dedication of the Association's new headquarters building was carried out on October 31, 1958, stated that the arrangements were altogether appropriate to the historic occasion, and asked the Secretary to communicate these sentiments to the APA House Committee who planned the program, to the Central Office staff who executed it, and to Mrs. Henry Laughlin and her Committee of Volunteers who so generously contributed to the success of the occasion. Did not approve a request for the compilation and maintenance by the Central Office of a listing of summer

employment in psychiatry for medical students because staff is not available to undertake such an operation at this time. Approved the recommendations submitted by Dr. Daniel Blain regarding the financial arrangements for the Manpower Project with the stipulation that September 15, 1958 be continued as the beginning date for the preliminary contract. Approved in principle a Psychiatric-Psychological Evaluation Program by the United States Information Agency and referred it to the Committee on National Defense for further study. Approved in principle the proposed plan for Alan Gregg Memorial Consultancies in Psychiatry, which would make it possible to utilize fully the abilities and the experience of aging and aged psychiatrists.

Executive Committee Meetings, January 24, 1958 and March 7, 1959. Directed that the two APA members of the Psychiatric Research Fund Council, Dr. Gerty and Dr. Branch, should meet with this Council and proceed according to their best judgment on the proposed dissolution of the Fund and merger with Research In Schizophrenia Endowment. Approved in principle a plan for a Conference on a Restudy of Present Standards which would make recommendations concerning their future development, elaboration, and application. Directed that, in view of the invitation by Canada to the International Congress of Psychiatry, an invitation not be extended by the U. S. A. and that the APA firmly support the meeting in Canada. Approved the appointment of Dr. Francis Braceland, Dr. Winfred Overholser, and Dr. Lothar Kalinowsky to a committee to work out arrangements between the U. S. A. and Canada for the International Congress. Reiterated with enthusiasm its approval in principle of the proposal for the establishment of Alan Gregg Memorial Consultancies in Psychiatry. Expressed its approval of a certificate to be presented to Dr. Seymour Vestermark on March 7, 1959. Requested the President to appoint a Commission on Awards and Recognitions to present recommendations at the Fall Council meeting on proposals for types of awards, format, method of selection, and continuance of the Commission itself. Ap-

proved a restatement by the Secretary of the policy governing joint meetings between APA Sections and outside organizations at the APA Annual Meeting. Directed that the publication of the proceedings of the APA Teaching Institute at McGill University not be underwritten by operating funds of the APA. Approved the revised budget for 1959-1960 as recommended by the Treasurer with expenditures totalling \$716,749 and income estimated as \$763,125.

Approved a proposed plan for coordinating of Journal and Mail Pouch advertising on a one-year trial basis as presented by Mr. Davies with the understanding that it will produce more income for both the Journal and the Mail Pouch. Stated that the APA is not able to participate in a commercially sponsored conference such as the one held by the National Hearing Aid Industry but indicated that the Conference is free to invite members of the Association to participate as individuals. Requested the Medical Director to prepare a letter commending Mrs. Marion Hildebrand for her volunteer work for the Mental Hospital Service. Expressed gratification that the World Health Organization had designated April 7, 1959 as World Mental Health Day, thus giving international recognition to one of humanity's greatest health challenges and furnishing a fitting prelude to World Mental Health Year in 1960. Also directed that this statement be disseminated to the membership and that the Medical Director relay it to appropriate organizations and leaders. Approved the appointment of Dr. Joel Handler as APA representative to a meeting of the Joint Committee to Study Paramedical Areas in Relation to Medicine, held on April 4-5, 1959. Voted that in view of its minimal participation, the APA withdraw from the Psychiatric Research Fund and not continue in any official capacity, and authorized the President and the Secretary, Board members by virtue of their APA offices, to resign from their positions with the Psychiatric Research Fund. Reiterated its approval for the appointment of a committee to review the financial structure of APA insurance plans, with a \$1,000 appropriation for committee expenses. Voted to continue the contract with Dr. Daniel Blain for the Manpower Project

until June 5, 1959 with some modifications of the original conditions. Directed that an amount not to exceed \$2,000 be made available to the Coordinating Committee on Technical Aspects of Psychiatry during the current budget year to defray obligations already incurred and directed that a careful evaluation be made of inevitable expenses for the coming year. Asked the President to appoint a delegate to the International Congress on Mental Retardation to be held in the summer of 1959. Authorized payment of obligations incurred by the Assembly of District Branches in excess of its budget for the 1958-1959 fiscal year. Extended a vote of commendation to Dr. Mathew Ross for his work in stating principles for planning facilities and services for psychiatric care, authorized him to continue with this project together with the American Hospital Association, and to work towards publication of this set of principles in final form. Directed that the Ad Hoc Committee on Relations with the Canadian Psychiatric be dissolved and empowered the President to work with Dr. Charles Roberts on arrangements for a joint committee between the APA and the Canadian Psychiatric Association. Directed that the Medical Director proceed with a plan for obtaining donations of books for the Central Office library and for psychiatric centers abroad. Authorized APA participation in the 1960 White House Conference on Children and Youth and directed that a delegate be appointed and that \$100 be contributed to the Conference from the Council Contingency Budget.

Council Meetings, April 25, 26, and 30, 1959. The Council was informed that Dr. C. H. Hardin Branch would be unable to perform his duties as Secretary for several months because of illness. Acting under its authority as the constitutional governing body of the APA, the Council authorized itself to nominate and elect a Secretary Pro Tempore with all the powers and functions of the Secretary until such time as Dr. Branch is again able to assume the duties as Secretary. Elected Dr. Lawrence C. Kolb as Secretary Pro Tempore. Approved the actions of the Executive Committee since the Council meeting of November 21-22, 1958. Recommended acceptance

by the membership of the list of candidates for election to membership or change in status, as submitted by the Membership Committee. Voted that the APA rejoin the National Health Council and authorized the payment of dues to this organization from the Council Contingency Fund. Requested the President to appoint an Ad Hoc Committee to study the proposed addition to the By-Laws dealing with Chapters in District Branches. Directed that Dr. Howard Potter be asked to explore unofficially with the Philippine Psychiatric Association the question of whether that body might wish to make a direct request to the APA that the Philippines be included in the roster of countries served by the Association. Nominated Dr. Jack Ewalt for a term on the American Board of Psychiatry and Neurology to succeed Dr. David Boyd whose term expires December 1959. Directed that the Commission on Principles and Position on Current Issues in Psychiatry concern itself with problems that are relevant to the American Psychiatric Association as a whole and that local problems should be referred to local and District Branch Societies unless the Commission is requested specifically to assist. Requested that Dr. Francis Braceland, Chairman of the Commission, appear before the Assembly of District Branches to explain the above action. Authorized the appropriation of approximately \$12,000 per year to employ a legislative aide to work in conjunction with the Commission on Principles and Position on Current Issues in Psychiatry. Approved the continuation of the Commission for another year and accepted its report. Directed, on recommendation of the House Committee, that no portraits be hung in the Modern Founders' Room in the Central Office at the present time. Approved a plan to hang portraits of the 13 founders in the Century Club Room and directed that such portraits should be from 20-24" wide and 24-30" high, rectangular or oval, that the frames should be gilded and not wider than 4", that the portraits need not be uniform in size, style, or medium, and that original portraits are preferred if such are available. Directed that a portrait of Dr. Benjamin Rush, 36" high and 30" wide, should be

hung in the main foyer of the Central Office behind the receptionist's desk. Directed that photographs of Past-Presidents of the APA should be solicited from the individual concerned or from his family, that such photographs should be approximately 8 inches wide and 10 inches high, with a dull mat finish. These should be presented unmounted and unframed, and autographed. In case the Past-President is deceased, a facsimile of his signature will be reproduced on the photograph from an available copy. Directed the Secretary to write to all Past-Presidents and instructed the Committee on History of Psychiatry to undertake such research as is necessary to obtain a complete set of photographs. These photographs will be hung in the Presidents' Room and/or at such suitable locations as the House Committee may select. Rescinded the Standards for Electroshock Treatment of May 1953. Approved APA membership in the World Federation for Mental Health and authorized payment of membership dues amounting to \$92.80. Received a report from Dr. George S. Stevenson on methods of honoring outstanding work by members of the Association. On suggestion by Dr. Blain, requested the President to appoint an Ad Hoc Committee to oversee the handling of funds remaining in the Manpower Project. Approved the recommendation that the Vice-Presidents of the Association be assigned the duty of speaking before the constituent psychiatric organizations of the APA to interpret the policies and actions of the Association and to report the questions and reactions which they so gather to the Executive Committee. Requested the President to appoint an Ad Hoc Committee to review the matter of expenses and speaking engagements of Vice-Presidents. Upon recommendation of the Ad Hoc Committee appointed to study the matter of District Branch Chapters, approved in principle a plan leading to only one District Branch in each State, Province, or Territory, and stated that if it seems desirable, a Branch could organize within its geographical area one or more sub-sections known as Chapters. Referred this proposal to the Assembly for development and expressed the opinion that, in the meantime, new District Branch-

es should not be organized to cover less than a State, Province, or Territory, and that further fragmentation of present District Branches should be discouraged. Recommended that the Ad Hoc Committee to study this matter be continued as long as necessary and directed that it work in cooperation with the similar committee of the Assembly. Approved the signing of checks and the management of APA financial affairs by Dr. Addison M. Duval, the new Treasurer, effective May 1, 1959. Authorized Mr. Austin Davis, Executive Assistant, to continue to sign checks on all checking accounts of the Association, subject to present voucher controls or by any different system of voucher controls adopted by the Treasurer on recommendation of the Auditor. Authorized Mr. Joseph Turgeon to continue to sign checks on the checking account in the Riggs National Bank in Washington, D. C. Authorized the Medical Director and/or the Committee on Grants and Awards to receive spontaneous funds for establishment of a Seymour D. Vestermark Memorial Lecture on the subject of Psychiatric Education. Designated Dr. George S. Stevenson as APA representative to the Second National Conference on World Health in Washington, D. C. on May 7-9, 1959. Elected Dr. William Malamud as Moderator for the Council and Executive Committee for the coming year. Elected Dr. Francis Gerty and Dr. Jacques Gottlieb to serve on the Executive Committee during the coming year. Elected Dr. Paul Huston to the Council to fill the unexpired term of Dr. Addison M. Duval, the newly elected Treasurer. Approved the appointment of Dr. Arthur Unger and Dr. Lloyd Morrow to the Membership Committee. Regarded favorably the work of the Committee on Relations with Psychology and encouraged it to pursue several solutions which the Committee had suggested to resolve the problems existing in this area. Expressed its realization to colleagues in the Canadian Psychiatric Association of their obligation and prerogatives to make the final decision regarding the date of the International Congress of Psychiatry in Montreal in 1961 but expressed the sincere hope that an amicable arrangement can be reached whereby this

meeting date will not conflict with that of the World Federation for Mental Health in Paris in August-September, 1961. Directed that the type "D" student fellowships given by the Smith, Kline and French Foundation Fellowship Committee be called "Vestermark Fellowships" as recommended by that Committee. Directed that it be made a rule of the Executive Committee and the Council, to be reconsidered each year, that the Medical Director be present at all Executive Sessions of either body unless specifically directed otherwise. Recommended approval by the membership of the proposed Rhode Island District Branch. Directed that an explanatory paragraph be prepared by the Committee on Constitution and By-Laws in cooperation with the Speaker of the Assembly to accompany the alternate choices for proposed amendment to Article V, Section 2 of the By-Laws. Requested the President of the Association to send a telegram to the North Dakota State Medical Association stating the APA's position regarding the appointment of a non-medical superintendent to a mental hospital and advising that, in the best interests in the care and treatment of such patients, including the mentally retarded, an adequately trained psychiatrist should serve as the principal administrator. Authorized the appropriation of \$150.00 to the Committee on Aging to conduct a re-survey of psychiatric interest and activity in the problems of the aged, utilizing a random sample of 600 members of the APA, to determine any change in attitude or practice since the first survey carried out three years ago. Expressed appreciation for the fine job done by Dr. Frank Curran in his position as Chairman of the Coordinating Committee on Technical Aspects of Psychiatry. Authorized the appropriation of an additional \$1000 to the Coordinating Committee on Technical aspects of Psychiatry for the 1959-1960 budget year. Continued the Ad Hoc Committee on Education in Public Hospitals in Liaison with the American Psychoanalytic Association. Changed the Ad Hoc Committee on Increasing Responsibilities of the APA to a Standing Committee on Internal Activities of the APA, with rotating membership, reporting directly to Council. Continued the Ad Hoc

Committee on an Organization for Mental Hospital Personnel for another year. Authorized a change in name for the Committee on Legal Aspects of Psychiatry to the Committee on Psychiatry and the Law. Authorized a change of name for the Committee on Industrial Psychiatry to the Committee on Occupational Psychiatry. Continued the Ad Hoc Committee on District Branch Committees for another year. Authorized the annual appointment of an official liaison representative to the American Bar Association as recommended by the Committee on Psychiatry and the Law. Approved a recommendation for a change in size of the Committee in Liaison with the American Hospital Association to permit six representatives from each organization on the Committee. Approved the recommendation of the Ad Hoc Committee on an Organization for Mental Hospital Personnel that District Branches be encouraged to hold local Mental Hospital

Institutes on a trial basis to see if the relations with non-psychiatric hospital personnel under study by this Committee could be thereby established. Authorized the Committee on National Defense to send a letter to the Federal Aviation Agency reaffirming its previous suggestions regarding mental and physical examinations of prospective civilian pilots. Upon recommendation by the Committee on National Defense, voted to record through the Medical Director its regret and objection concerning the extreme limitation of psychiatric treatment in the Medicare Program. Authorized the Medical Director to assist in the establishment of a proposed organization of non-medical mental hospital business managers. Directed that no member of the Council, nor any candidate for this office, should be scheduled on the Annual Meeting program on Thursday.

LAWRENCE C. KOLB, M.D.,

Secretary Pro Tempore

TREASURER'S REPORT : AMERICAN PSYCHIATRIC ASSOCIATION

At the close of our Fiscal Year, which ended March 31, 1959, we find we have been able to live through our most difficult period, financially, without borrowing any money, with a home which is debt free and with assets totalling over $\frac{1}{2}$ million dollars.

On that date our position was as follows :

Cash on hand (including savings accts.)	\$ 53,111.32
Accounts receivable	14,109.15
Marketable securities (book value \$88,134.60)	152,600.00
Central office land and building at cost	\$275,907.30
Furniture and equipment (Central Office)	15,229.94
	<hr/>
	291,137.24
Total Assets	\$510,957.71

\$92,430.30 of these assets have been allocated to special purpose and restricted funds, and are therefore not available for other expenditures leaving a balance of \$418,527.41. In addition, there is a total of \$47,134.76 in cash and securities in Restricted Funds.

Against these assets are liabilities of one type or another of \$85,441.62. Also the assets figure contains a paper profit of \$64,465.34 on our securities. This figure, of course, fluctuates depending on the market. Our portfolio

is sufficiently diversified, however, that, barring a general downward trend in the market, our investments represent a sizeable profit. Also it will be noted that the home and furnishings are carried in this report at cost. This is an extremely conservative figure.

If, then, we deduct our liabilities from our

assets, other than those contained in restricted funds, we still have net assets of \$333,085.79. The bulk of this consists of our home and our investments.

It may well be asked why our annual budget is so tight if we have assets of this magnitude. It should be remembered that these assets as listed here consist of debt-free property and securities at market value on March 31, 1959. The securities earned the Association \$5,864.79 last year. To liquidate

any portion of them will not only reduce our favorable financial position, but will also reduce the income to the Association. To realize cash on our property would either increase our fixed obligations by the amount of interest charged on the loan or it would permanently reduce our financial base by sale of the property. Therefore eating into these funds should be reserved for dire emergencies or as a part of a general program of liquidation.

On the other hand, it appears as though we must budget increased amounts for our fixed expenses in the future over what we have in the past. Costs continue to rise which means that it will cost us more money to do the same things we are doing now. This applies to salaries, utilities, taxes, travel, printing, postage, rent and other items. Fortunately, due

to the dedication and skill of our Executive Assistant, Mr. Austin Davies, we have been able to get by during the past year. I can assure you this has required real financial acrobatics.

The membership may find that for the next few years many projects which are desirable and worthwhile may of necessity be deferred until they can be financed within our annual income.

We have come through our most difficult year although the next two or three will also be strenuous, but we are coming out of the woods and, I confidently feel that our greatest and most productive days are still ahead of us.

R. H. Felix, M.D.,
Treasurer

NEWS AND NOTES

MILWAUKEE NEURO-PSYCHIATRIC SOCIETY.

—The annual meeting of the Milwaukee Neuro-psychiatric Society was held on Wednesday, May 20, 1959. Officers selected for the year 1959-60 are as follows: president, C. J. Buscaglia, M.D.; vice-president, George J. Martin, M.D.; secretary-treasurer, Henry Veit, M.D.; councillors remaining: Edward Carl Schmidt, M.D., and David Cleveland, M.D.

ASSOCIATION FOR THE ADVANCEMENT OF PSYCHOANALYSIS, INC.—On Wednesday, September 30, 1959, the Association will sponsor its regular meeting at the New York Academy of Medicine at 8:30 p.m. Dr. Harold Kelman will present a paper entitled "Separateness and Togetherness." The discussants will be Drs. Jack L. Rubins and Abe Pinky.

AMERICAN ACADEMY OF PSYCHOTHERAPISTS.—The fourth annual conference of the American Academy of Psychotherapists will be held October 17-18, 1959, at the Barbizon Plaza Hotel, N. Y. C. The topic is "Divergencies and Agreements in Methodologies of Psychotherapists." Dr. Robert A. Harper will present the theoreticians' viewpoint concerning the 5 schools of psychotherapy which will include the following: Rudolf Dreikurs, M.D. (Adlerian); Jule Nydes (Freudian); Laura Perls, Ph.D. (Gestalt); Carl Rogers, Ph.D. (Client-Centered); and Carl Whitaker, M.D. (Experiential). The dinner speaker will be Leonard Feldstein, M.D., Ph.D. For further information write to: American Academy of Psychotherapists, 30 Fifth Ave., New York 11, N. Y.

SOCIAL LEGISLATION INFORMATION SERVICE, INC.—This nonprofit association established in 1944, supported by contributions and subscriptions, reports impartially on

Federal social legislation and the activities of Federal agencies affecting family life, children, and community services in the areas of health, education, welfare, housing, employment and recreation. The Service takes no position for or against the legislation reported.

Subscriptions to the Bulletin may be obtained from Social Legislation Information Service, 1346 Connecticut Ave., N. W. Washington 6, D. C. Price: \$18.00 per year; single copies 25c.

CLINICAL NURSING OFFICER AT SASKATCHEWAN HOSPITAL, WEYBURN, SASK.—At the second annual meeting of the Saskatchewan Psychiatric Nurses Association held at Valley Centre, Fort Qu'Appelle, June 2-3, 1959, attention was called to the fact that the Organization of the Nursing Service at the Saskatchewan Hospital, Weyburn, was the only one of its kind on the North American Continent. The difference between this organization and other nursing services is the addition of the "Clinical Nursing Officer" whose responsibility is as an advisor and coordinator between nurse, psychiatrist and other departments. This Officer acts in a position of sapiential authority as opposed to the structural authority common to most hospitals and enables nurses to express their ideas on patient care as well as saving the psychiatrist time.

DR. TOMPKINS HEADS RELIGION AND MENTAL HEALTH GROUP.—Dr. Harvey J. Tompkins, director of psychiatry at St. Vincent's Hospital, N. Y. City, has been elected president of the Academy of Religion and Mental Health, succeeding Dr. Kenneth E. Appel, the first incumbent. The term of office is two years.

MENTAL HEALTH PROBLEMS OF AGING AND THE AGED.—The sixth report of the Expert

Committee on Mental Health titled, "Mental Health Problems of Aging and the Aged" (Technical Report Series No. 171) is currently available from the World Health Organization, Palais Des Nations, Geneva, Switzerland. Price: 60c.

PUBLIC HEALTH NEWS (NEW JERSEY DEPT. OF HEALTH).—The June 1959 issue of this publication is devoted to the psychiatric problems of childhood which are covered by 8 contributions (Drs. Senn, Kanner, Gallacher, Rose, Robinson, Brancale, V. Terrell Davis, and Carl E. Wendel).

This symposium offers a valuable survey of the more common psychiatric problems and developments of childhood and adolescence.

VOLUNTEER SERVICES TO PSYCHIATRIC PATIENTS.—A report of the Conference on Volunteer Services to Psychiatric Patients held in Chicago, Ill., June 12-17, 1958, is embodied in a 124-page book published by the American Psychiatric Association, entitled *The Volunteer and the Psychiatric Patient*.

The 5 chapters contain a description of the types of volunteer services both in and outside of the hospital and further principles for volunteer programs. There is also a bibliography of the literature on volunteers in psychiatric institutions.

The book may be obtained from The American Psychiatric Association, 1700 18th St., N. W., Washington, D. C.

DR. EDWARD E. MAYER.—The death of Dr. Mayer, prominent psychiatrist of Pittsburgh and supervising director of the Allegheny County Behavior Clinic, occurred June 2, 1959. He was 82 years of age.

He was a graduate of the University of Pittsburgh in both arts and medicine and had been associated with city and county mental health agencies for almost 60 years. He was a frequent contributor to medical

literature and had edited Oppenheim's *Diseases of the Nervous System*.

Dr. Mayer was active as consultant both in private practice and in criminal cases. A sentence of his is worth quoting and giving serious consideration: "It is wrong to think of antisocial behavior as always due to mental illness, and that all delinquents need psychiatric care."

He had served as Medical Director of Fairview Sanitarium and as Associate professor of Psychiatry, University of Pittsburgh; also as neurologist and psychiatrist to the Presbyterian Hospital and the Woman's Hospital of Pittsburgh, and as psychiatrist to the juvenile court of Allegheny County.

In Dr. Mayer's death Pittsburgh has lost one of her most distinguished and respected citizens and physicians.

AMERICAN PSYCHOSOMATIC SOCIETY.—The Society will hold its 17th annual meeting at the Sheraton-Mt. Royal Hotel in Montreal, Canada, on Saturday and Sunday, March 26-27, 1960.

The Program Committee would like to receive titles and abstracts of papers for consideration for the program no later than December 1, 1959. The time allotted for presentation of each paper will be 10 or 20 minutes.

Abstracts, of 2 or 3 pages, in 9 copies, should be submitted to Eric D. Wittkower, M.D., Chairman, Program Committee, 265 Nassau Road, Roosevelt, N. Y.

AMERICAN NEUROLOGICAL ASSOCIATION.—At the 84th annual meeting of the American Neurological Association held in Atlantic City, N. J., June 15-17, 1959, the following officers were elected for the year 1959-60:

President: Derek Denny-Brown; president-elect: Harold G. Wolff; 1st vice-president: Charles Rupp; 2nd vice-president: Samuel Brock; secretary-treasurer: Melvin D. Yahr; editor of the transactions: Melvin D. Yahr; assistant secretary: Charles H. Millikan.

Dr. Bernard J. Alpers was elected to the Council for 5 years, Dr. Benjamin Boshes

for 2 years, and Dr. Adolph L. Sahs was appointed as a Representative to the American Board of Psychiatry and Neurology.

The following were elected to Active Membership in The American Neurological Association: David B. Clark; Robert Fishman; Eli S. Goldenson; Howard Krieger; William M. Landau; Tiffany Lawyer; Lewis L. Levy; Leo Madow; Kenneth R. Magee; John S. Meter; Lewis P. Rowland and H. Edward Yaskin.

Elected to Associate Membership were: William S. Battersby and Irving H. Wagman.

Elected to Corresponding Membership: Abraham Mosovich.

The 85th annual meeting will be held June 13-15, 1960, at the Statler Hotel in Boston, Mass.

THE FOUNDATIONS' FUND FOR RESEARCH IN PSYCHIATRY.—October 15, 1959, is the next deadline for receipt of applications for research fellowships in psychiatry, psychology, sociology, neurophysiology, and other sciences relevant to mental health. The following deadline is January 15, 1960.

Applicants for fellowships should have completed their residency training and preferably have had several additional years experience in research. Interdisciplinary research training is encouraged as is additional training in the applicant's own field.

The Foundations' Fund also makes grants in support of research in mental health. Completed applications for research grants in-aid should be filed not later than December 10, 1959.

For further information write to Foundations' Fund for Research in Psychiatry, 251 Edwards St., New Haven 11, Conn.

AMERICAN ELECTROENCEPHALOGRAPHIC SOCIETY.—The newly elected officers of the American Electroencephalographic Society, elected at the June 1959 meeting in Atlantic City, are as follows:

President: Dr. Arthur A. Ward, Jr., Seattle 5, Wash.; president-elect: Dr. Jerome K. Merlis, Baltimore, Md.; secretary: Dr. George A. Ulett, St. Louis, Mo.; treasurer: Dr. Isadore S. Ziff, Richmond, Va.

WORLD POPULATION AND POTENTIAL FOOD SUPPLY

From the facts presented, it is obvious that the present accelerated upsurge of population in the world cannot be disregarded without disaster. The trends predicted by Malthus are apparent today. The world population has more than quadrupled since 1650, but the average yield of food crops per unit area of land generally have been increased at a much lower rate . . . Some measure of population control is necessary. Mankind ultimately must live within his resources or suffer the consequences of the controls imposed by nature.

—WARREN H. LEONARD,
Professor of Agronomy,
Colorado State University.

BOOK REVIEWS

THE CHEMICAL CONCEPTS OF PSYCHOSIS.

Edited by Max Rinkel and Herman C. B. Denber. (New York: McDowell, Obolensky, Inc., 1958, pp. 485, \$7.50.)

This book contains up to date reviews by 54 leaders in the various aspects of this field, and is, therefore, strongly advised for all individuals seeking an understanding of the present frontiers in research in this rapidly advancing area of experimental psychiatry. It begins with Henry Osmond's historical contribution in which Lewin's book, *Phantastica*, a pioneer in psychopharmacology, is noted. Among the path-finding work he considers that of Macht, who was the first to report the possibility of a substance in the serum of schizophrenics different from any found in nonschizophrenic normal individuals. He also quotes the investigations of Hoffer, Baruk, Buscaino, Hofmann, Heath, Hoch, Woolley, Rinkel and Mayer-Gross, and it is significant that each of these leaders reviews his own contributions in the same volume. Winter and Flataker, Streiffer and Kornblueth follow the lead originally suggested by Macht and find evidence for chemical differences between the sera of normal controls and schizophrenic patients. The list of papers includes Denber's report concerned chiefly with mescaline-induced changes in human subjects, and Evarts' electro-physiologic and behavioral studies of psychotomimetic drugs. Cerletti emphasizes the very small fraction of LSD that enters the brain and Brodie evaluates the role of serotonin as a chemical transmitter. Other experimental work was done on humans by Sherwood, on animals by Feldberg and Marrazzi, and on brain tissue by Bogoch. In all these instances suggestive conclusions are drawn on possible chemical deviations in schizophrenia. The Austrian psychiatrists, Hoff and Arnold, present an amazing analysis of the unsettled problem of schizophrenia and the thoughts of Brill, the Sacklers, Kline, Reiss and Letemendia are all of value to anyone concerned with progress in the organic approach to psychiatry. Block presents a striking suggestion that schizophrenics are victims of chronic poisoning. In contrast to normal individuals in whom the incorporation of amines into proteins is prevented, such an incorporation takes place in schizophrenic patients who are, therefore, subjected to the toxic effects of amino proteins.

The last article is that of Gilbert Cant, who

presents a nontechnical review of the volume's contents and explains to the reader not versed in biochemistry the meaning of the new results. It is hoped that enough has been said in this brief review to convince the potential reader that he can acquire a more than passing facility with this many-faceted biochemical attack in psychiatry by perusing these important papers and reviews in this carefully edited volume prepared in an attractive and readable format.

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COMMUNICATION, ORGANIZATION, AND SCIENCE. By Jerome Rothstein. (Indian Hills, Col.: Falcon's Wing Press, 1958. pp. 110. \$3.50.)

The steadily increasing implications of information theory for the biological sciences (as evidenced in the fields of genetics, immunochemistry, and neurophysiology), make the appearance of a book such as this a timely event. Although written by a physicist (and carrying a long and scholarly foreword by a fellow physicist) the range of this book is of the widest. It starts with a consideration of the relation of the process of information to entropy, and goes on, by way of chapters on Measurement and Communication and their relation to Thermodynamics, to a discussion of the essential elements of language, and the processes partaking in the construction of scientific theory. The last chapters are devoted to an application of the "Organization Concept," as developed by the author, to the Theory of Games, and the behavior of organized mechanisms in random game situations. It ends with a tantalizingly brief statement of minimal desiderata needed for the construction of the universal medium of communication (i.e. a universal scientific language), and with a forceful Credo looking towards a "Unified World Outlook."

In the welter of ideas propounded by the author with clarity and elegance, the non-mathematical psychiatric reader can but select a few items which point to his own subject. One is the argument, advanced in the foreword by Dr. Muses, and extended subsequently by the author, for a need for the conceptualization of the topology, i.e. struc-

ture, of Time. This intra- and inter-connectivity of time points and time intervals Dr. Muses names 'Chronotopology.' "The appreciation of time intervals are merely the measure of time ; they are no more time than rulers are what they measure. Of the nature and structure of time itself investigators have all but been silent." One would fully endorse this view, and note the strange way in which this, as yet undeveloped, area provides a meeting ground between the physicist and the sensory physiologist. For both are becoming increasingly cognizant of the way in which a structuring of events in time (in terms of probability) defines these very events, and makes possible their manipulation. In neuropsychology, as in physics, the time dimension is replacing the older dimension of space, an evolution not unlike that undergone by physics towards the turn of the present century.

The ideas proposed by Dr. Rothstein lead on naturally from the ideas outlined in the foreword. Starting with Boltzmann's discovery of the statistical explanation for thermodynamical entropy, he examines entropy as a measure of information by the selection of a message. "Selection of a subensemble from a given ensemble generates an amount of information equal to the difference of the entropies of the two ensembles." This "Set" and "Subset" view he applies successively to the concepts inherent in logic, and the evolution and structure of language as a means of obtaining, and communicating, meaning. The argument is fluid and alive, and ultimately leads to a discussion of organization of data by machine, including the "Well Informed Heat Engines" developed in living matter at macromolecular level. Pervading the argument is the concept of the isomorphs ; the best information-machine we are making, and are likely to make, is built on specifications not unlike the strange molecular machines which make up the very stuff of life.

Whether the coding and memory machines which Dr. Rothstein envisages for the future will indeed expand or contract our lives or the lives of our successors, the message of this essay is clear and relevant. The mathematical and engineering techniques hitherto only inadequately applied to biology may hold profound implications for neuropsychology, psychology and psychiatry. Their core is the structuring and relatedness of events to time, and the provision of adequate techniques for their

apprehension and their analysis. Whether we like it or not, the tide of a major scientific evolution is flowing through the Behavioral Sciences ; Dr. Rothstein does them a service by charting their currents in his clear and incisive way.

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LA SCHIZOPHRENIE. By Guy Delpierre. (Geneva : Chas. Fomara, 1957, pp. 109.)

This small monograph consisting of 7 chapters is from the International Institute of Psychology and Psychotherapy. Several definitions of the term "schizophrenia" are given including those of Bleuler, Deny, Levy-Valensi, Kretschmer and Claude, the psychogenic and neurogenic factors of etiology are emphasized and the symptoms are enumerated and classified.

In the chapter on dissociation the author points out the differences between this reversible phenomenon and "dementia" and describes the "vital difficulties" the patient has with eternal reality, with the body image (the "mirror sign" is given a special consideration), and with the affective, intellectual and interpersonal components of dissociation.

Three of the Kraepelinian types of clinical constellations are presented, namely, hebephrenic, catatonic and paranoid with their differentiating characteristics. A chapter on the development of the disorder is given with the differential diagnosis from known brain diseases and psychoneuroses and one on pathological anatomy with the comments limited to the histopathology and disturbed neuropsychology of the brain structures.

The 9 pages devoted to therapy considers very briefly the methods of Federn, Fromm-Reichmann, Melanie Klein, Rosen and Secheyhaye.

Since there is no author's preface or foreword, the reasons for writing are not quite clear ; however as a condensed text it may be useful to teachers of psychiatry who wish to make a brief review of the phenomenologic aspects in preparing class material. The bibliography (45 items) refers very largely to French sources, but a considerable number of other authorities are quoted without references.

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IN MEMORIAM

KONSTANTIN MIHAILOVICH BYKOV

My first memory of Bykov is that of meeting him in Pavlov's laboratory in the Institute of Experimental Medicine, Petrograd, 1922, and my last when I bade him goodbye as he was leaving the United States in June 1958. After Pavlov, he has done perhaps more to advance the experimental science of the conditional reflex than has any other of Pavlov's pupils. His death in May 1959 in his early 70's removes the best known of the pupils of Pavlov.

Like Lomonosov and many other Russian scientists, Bykov was of humble origin, and like Pavlov he was educated for the priesthood. After studying medicine, he worked with two distinguished Russian physiologists, Pavlov and Uktomsky, the neurophysiologist. Most of his life was devoted to a steady and unremitting expansion of the investigation of the conditional reflex concepts, by thorough, well designed, and laborious experimentation on the interrelation of the viscera and their adaptation to the external and the internal environment through the mechanism of the conditional reflexes. This work was summarized in *The Cerebral Cortex and the Internal Organs* (New York, 1957, tr. by Gantt). For several decades he worked tenaciously and patiently as a pioneer and almost alone in this field, assisted and encouraged by his wife. However with the gradual increase of funds accorded scientists by the Soviet government, he expanded his physiological department at the Academy of Sciences, Leningrad, which with its branch at the subsidiary genetic laboratory in Koltushi, became the second largest research institute in the Soviet Union, having on its staff a total of 700, 200 of whom were scientists. He studied practically all the important viscera in connection with their acquisition of conditional reflexes and their inter-relations, viz. the interoceptive conditional reflexes.

Bykov became the spokesman for Pavlovian physiology after Pavlov's death. This was done through a firm belief in the soundness of the teaching of his master.

Although he stood at the pinnacle of his profession in Russia, he was never extravagant in his own claims, and accorded the most credit for his concepts to Pavlov. He was not a member of the Communist Party and to the best of my knowledge he kept his science free from subservience to politics. Outspoken in his criticism and opinion, he was nevertheless conservative.

A year before his death, he visited the U. S. A. for the first time, at the invitation of the American Psychiatric Association and of the International Gastroenterological Society, speaking before these bodies in San Francisco and in Washington, lecturing en route to the students of Dr. Magoun, in Los Angeles, at Little Rock and at the Johns Hopkins University.

Bykov's sojourn of 5 weeks in the U. S. A. had the double effect of changing his point of view about our country and our opinion of the Russian scientists. He said that when he came here, owing to the articles of Ehrenburg, he expected to be stoned, and that he was amazed to find conditions so different from what he had imagined. His simplicity, humor and genuine courtesy spread an aura of charm everywhere he went. He was described as an "honest and upright gentleman, distinguished and dignified looking, and in his behavior he was the antithesis of what we have been led to expect from Soviet Russia" (John E. Peters). The American Psychiatric Association honored him by proposing him as an honorary member, the first from the USSR. His wife was killed in an automobile accident two years ago. He is survived by a devoted daughter, Tamara, a musician in the Leningrad Theater. His friendly and sparkling humor shining through a dignified mask impressed all those who met him here, and converted even the most obdurate to feel the force of the potential friendship of the scientists of his country and ours.

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DURHAM PLUS FIVE YEARS: DEVELOPMENT OF THE LAW OF CRIMINAL RESPONSIBILITY IN THE DISTRICT OF COLUMBIA

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Five years have passed since the U. S. Court of Appeals for the District of Columbia handed down its precedent-breaking opinion in *Durham v. United States*(1). This case, establishing a new test for criminal responsibility in the District of Columbia, occasioned wide comment in the medical and legal literature. It was hailed as a great forward step in bringing the law of responsibility closer to the concepts of modern dynamic psychiatry. Many prominent lawyers and a few psychiatrists regarded it with anxiety saying that it would confuse juries and raise serious legal problems because of its "vagueness." Five years and many appellant opinions later, it is possible to review these fears in the light of subsequent experience.

Most of the multitude of papers written about *Durham*, center around several key issues(2). Psychiatrists generally laud this opinion because it will "expand the area of inquiry and communication of the medical expert as a witness"(3) as well as help him to communicate his findings in his own language rather than in the cramped and distorting expressions of legal terminology(4). Opinions may be delivered in the context of clinical examination and observation—not as inquisitorial pronouncements regarding moral guilt. The determination of guilt will be left where it belongs, in the laps of the triers of fact be they judge or jury.

Legal papers focus their challenge of *Durham* mainly around the issues that its definition is too vague and ambiguous, and it will tend to befuddle and confuse the jury in its efforts to establish responsibility(5). Lawyers are reluctant to give up the clear and precise language of *M'Naghten*(6, 7). If in fact *M'Naghten* is clear and

precise, whether or not it conforms to any scientific psychology, is a moot point. Many express the fear that this law will so broaden the definition of insanity that many criminals will be turned loose to carry on further their anti-social behavior. This fear disregards the fact that in all jurisdictions, commitment of some sort automatically follows a finding of not guilty by reason of insanity. It is a separate question legally and must not be confused with the determination of responsibility(8).

When these papers were written, they were academic discussions and speculations of what *might* happen. Now, 5 years later, we can evaluate at least partially, the accuracy of these expectations and fears. I have had the opportunity to study the trial records as well as the appellate opinions of most of this line of cases, and it appears to me that in general, the Court of Appeals has progressively spelled out and clarified the issues arising from this new test. Many of the problems created by *Durham* have been met and solutions put forward.

Many legal scholars have shown reluctance to adopt such a liberalized rule stating that it is too far advanced for the current status of psychiatric knowledge, and that also it will permit the psychiatric expert to pre-empt the determination of responsibility. This they give as grounds for clinging to the long obsolescent rules of *M'Naghten's Case*(9). I would like to make several general observations about these cases before touching upon them separately.

The most striking feature of the post-*Durham* insanity cases is the failure by nearly all the psychiatric experts to utilize the new rule for its intended purpose. *Durham* asks the psychiatrist: (1) whether the defendant has a "mental illness"; (2) whether the alleged criminal act is the "product of the mental illness"; and (3) it asks him to explain, in the language of

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

² The Law School, University of Michigan, Ann Arbor, Mich.

his own specialty, the way in which the mental illness caused the defendant to commit the alleged crime. *Durham* explicitly states that this test is defined in general terms so that the expert will be free to testify without being limited by, or forced to use, language and definitions which are foreign to the current theories of his specialty (10). Until early 1958, the cases following *Durham* singularly failed to provide this sort of testimony. The testimony of most of the psychiatric experts continued to list classical symptoms of psychiatric syndromes, without discussing them from the standpoint of how they motivated or were related to the alleged criminal act. The records are replete with such words as "insanity," "psychosis," "schizophrenia," and "irresistible impulse," the peculiar clichéd idiom of this kind of case for more than 100 years (11). We find prosecution, and defense counsel frequently utilizing psychiatric language they obviously do not comprehend. Likewise, psychiatrists glibly use expressions like "incompetent," "unsound mind," and "insane"; legal words with no psychiatric or medical meaning (12). In short, discussion between psychiatrists and lawyers remained at the pre-*Durham* level, where stereotyped language, long since isolated from the roots of its legal or medical meaningfulness, continued as the principle vehicle for communication. Little if anything comprehensible or useful was conveyed to jury or judge in this manner, and their fact-finding about sanity, surely was due to impulse and chance, as often as it was to reason.

This continuing failure to communicate has been the subject of much discussion in appellate opinions since *Durham*. In fact, these subsequent opinions regarding problems of psychiatric expert testimony are so well written that abstracts from them would make an excellent manual for psychiatric court-room practice. Before making further general observations, let me review now the psychiatrically significant features found in the post-*Durham* cases.

I have already commented upon the much discussed case of *Durham*, and so will pass to the next case of importance, *Stewart v. U. S.* (214 F.2d 879). This case tried before *Durham* but appealed after

it, still came under the right-wrong test for criminal responsibility. However, the Court of Appeals held that when the trial judge charged the jury, "... the court's attempted distinction between 'mental disease' and 'mental disorder' was at least confusing" (ibid at 881). It went on to say that "Probably this attempted distinction was meant to implement the court's view that psychopathy is not a 'mental disease' and cannot relieve one from criminal responsibility" (ibid, 882). The opinion then notes that even under the old test for responsibility, the determination of what kind of mental illness might result in a finding of "not responsible," was a matter for the fact-finders (jury or judge, if no jury) and the judge's charge therefore contained "fatally damaging error." The Court observed that this case would be re-tried under *Durham*, and made it quite clear that it anticipated the inclusion of evidence of all forms of psychopathy under its new rule. If the meaning of this opinion had been well understood, it might have obviated some of the confusion which followed about the status of sociopaths under *Durham* (13). It should be emphasized that the policy decision of what the standard for responsibility will be, is a social decision expressed through the law—not a matter which psychiatrists can settle on or off the witness stand. As private citizens we may have our own opinions, but they must not get mixed up with our courtroom testimony (14).

Taylor v. U. S. (222 F.2d 398) (handed down in March, 1955) is important for its definition and discussion of the pre-trial psychiatric handling and examination of defendants likely to raise the insanity defense. Taylor had been committed following judicial determination of incompetency to stand trial, and when he regained his competency and was tried, the government introduced testimony (over defense objection) by the doctors who treated Taylor in St. Elizabeths. Defense argued on appeal that this was breach of the privileged communication District of Columbia patients have by statute (D. C. Code [1951] § 14-308, 29 Stat. 138).

The Court of Appeals, in its opinion, stated that this testimony was inadmissible

because of the privilege, and furthermore, it was inadmissible because of the extended protection given to information uncovered during competency hearings. We psychiatrists should pay special attention to this latter point because of the frequency with which we introduce information into our competency reports which not only is irrelevant to the question of competency, but greatly jeopardizes defendant's rights in his subsequent trial. This is an ethical as well as a legal question, which deserves closer scrutiny.

The second appeal of Monte Durham is worth a brief comment. In March of 1956, the Court of Appeals reversed Durham's second conviction (237 F.2d 760), after the trial court made essentially the same error it had in the first trial. The reluctance of some of the trial courts to accept the new rule, became quite apparent at this time. We shall see further evidence of this in later cases.

The next important case is that of *Douglas v. U. S.* (239 F.2d 52 [1956]). In this opinion the court takes up two problems of interest to us: 1. The question of the burden of proof in an insanity case, and 2. The relative weight of psychiatric versus lay testimony in these matters. In all criminal prosecutions there is a presumption of sanity in the defendant. Since the Supreme Court's opinion in *Davis v. U. S.* (160 U. S. 469 [1895]), once "some evidence of insanity" has been introduced by defense, the burden of proof shifts, and prosecution must then prove sanity "beyond a reasonable doubt." Though *Davis* was decided in 1895, little clarification of this issue has occurred since then. The *Douglas* case leaves the variable degrees of proof to be defined later, but it goes so far as to make the unusual statement that

In an appropriate case there is a duty to set aside the verdict of guilty and to direct a verdict of not guilty by reason of insanity—a duty to be performed with caution, however, because of the deference due the jury in resolving factual issues (ibid at 57).

The Court also begins in this case to spell out the nature of psychiatric expertise and how it is to be distinguished from lay opinion. In relation to the jury's peroga-

tives in dealing with psychiatric testimony, the Court states that its prior holding in *Holloway* (148 F.2d 665)

... is not authority for disregarding expert testimony. It must be considered with the other evidence, not arbitrarily rejected. A jury must not be upheld in arbitrarily convicting of crime (ibid at 59).

This case sets the stage for further refinement of the questions of weight of evidence and burden of proof.

Six months after *Douglas* in April, 1957, when *Blunt v. U. S.* (244 F.2d 355 [1957]) was decided, the court further clarified its views on psychiatric expert testimony. Noting that the trial judge charged that "*The doctor's opinion was not therefore based on actual observation or on actual facts, but on conclusions drawn from an examination held considerably after the commission of the offenses*"³ (ibid at 364) the court said:

As an expert witness, the psychiatrist is permitted to testify to his inferences from facts. His opinions are exactly what is sought. And these opinions may be based upon facts he has himself observed, or facts he has heard others relate, or hypothetical facts presented to him. The purpose of employing an expert witness is to obtain for the jury the type of clinical opinion he is accustomed to form and to rely upon in the practice of his profession. This is what the psychiatric witnesses did in this case. Though their conclusions were not mathematically demonstrable certainties, neither were they mere conjectures, suspicions or hunches.

Because of the trial judge's distorting comments about the psychiatric testimony as well as other prejudicial remarks about the evidence, the case was reversed and remanded for a new trial (provided *Blunt* was found competent to stand re-trial) (15).

When the Court of Appeals reversed and remanded the second conviction of *Stewart* (*Stewart v. U. S.* 247 F.2d 42 [1957]) in a much divided *en banc* opinion, they further clarified their expectations regarding psychiatric testimony. Rejecting a contention by appellant they said,

The rule laid down by *Durham* requires no different examination by the psychiatrist, but

³ Italics are the Court's.

only a different examination of the psychiatrist by the lawyer (*ibid* at 44).

Because of the prosecutor's hints that some of the psychiatric and lay witness testimony about defendant's mental state might be perjured and which . . . are the more prejudicial because their impact on the jury is always more or less strengthened by his official position . . . *Commonwealth v. Clark* 86 Ky. 663, 7 S. W. 155, 156 (1888)" (*ibid* at 46), the divided court reversed and remanded for a new trial.

In *Briscoe v. United States*, 245 F.2d 640 (1957), the nature of psychiatric testimony was discussed and clarified further. The Court notes that the psychiatric experts presented their testimony as conclusions, rather than the observations from whence they drew their conclusions. This case also provides several excellent examples of psychiatrists talking in the language of lawyers, lawyers and judges drawing psychiatric inferences, and even a psychologist making medical conclusions of fact. Judge Bazelon states in his opinion that:

It, by testimony that the accused either was or was not suffering from a "mental disease" or a "mental defect," a psychiatrist would be expressing a judgment that the accused should or should not be acquitted, that would be a legal rather than a medical judgment and would usurp the function of the trier of the facts. While the state of the accused's mental health is a proper subject of medical opinion, no purpose is served by giving the fact trier a doctor's version of a legal opinion. To that end, if the psychiatrists were to testify in terms embodying legal conclusions, the lawyers by examination and cross-examination, would seek to bring out the medical facts. The same is true if the psychiatrists were to testify in such ambiguities as "sound mind" or "unsound mind" (245 F.2d 640, 644).

The *Briscoe* opinion answers the argument that *Durham's* concept of "mental illness" will turn into the same ossified non-entity as M'Naghten's "Right from Wrong." Indeed, it might, but like all word symbols, it must be redefined constantly to maintain contemporary significance. *Durham*, *Briscoe* and other opinions, tend to force such re-definition and re-clarification.

In *Carter v. U. S.* (252 F.2d 608, 617 [1957]) the court stated:

Description and explanation of the origin, development and manifestations of the alleged disease are the chief functions of the expert witness. The chief value of an expert's testimony in this field, as in all other fields, rests upon the material from which his opinion is fashioned and the reasoning by which he progressed from his material to his conclusion; in the explanation of the disease and its dynamics, that is, how it occurred, developed and affected the mental and emotional processes of the defendant; it does not lie in his mere expression of the conclusion.

Herein lies the heart of a common difficulty for psychiatrists, and it is ironic that this advice must come to us from the Court. While courts often badger us for a different kind of information than this, at the same time we psychiatrists all too often forget the nature of the facts to which we are testifying. At the risk of being repetitious, let me say that when we use the labeling words of our profession, it is highly questionable that we are transmitting any information. The word *psychosis* for example may possibly mean something when one psychiatrist says it to another, but it most certainly has no accurate or specific meaning to a layman. On the other hand, a full description of the clinical observations which bring us to our "conclusion," may be very informative to that same layman.

The Court in this case also substantially clarified the relative merits of lay versus expert testimony. They write:

Also obvious upon a moment's reflection is the fact that, while a lay witness's observation of abnormal acts by an accused may be of great value as evidence, a statement that the witness never observed an abnormal act on the part of the accused is of value if, and only if, the witness had prolonged and intimate contact with the accused (252 F.2d 608, 618).

When the divided court affirmed the second conviction of Lyles, (*Lyles v. U. S.* 254 F.2d 725 [1957]) Judges Prettyman and Burger writing for the majority, reiterated the rule that the jury has the right to know and must be told what will happen to the accused if they find him "not guilty by reason of insanity." They also ruled on several technical questions regarding admissibility as evidence, of certain records of past mental illness as well as informa-

competency hearings.

The dissenting opinion in *Lyles*, (written by Bazelon, J.) makes it clear that the conflict among D. C. psychiatrists regarding insanity began in this case. The dissenters argue that the trial judge, when he remarked that Lyles' illness was "sociopathy," implied to the jury that if they found Lyles not responsible and committed him to the hospital according to the *Taylor* rule, he would be released shortly since he could not be mentally ill in the eyes of the hospital psychiatrists. In the light of subsequent developments at St. Elizabeth's regarding this diagnosis, there seems to have been considerable merit to this contention that the trial judge's charge regarding psychiatric evidence, was in fact prejudicial (13). This case is important for the issues which it raised, rather than for those it settled.

The main issues raised on appeal in *Wright v. U. S.* (250 F.2d 4 [1957]) involve the government's "burden of proving beyond a reasonable doubt that Wright was sane," and also the failure of the court to grant certain jury charges to defense. The opinion points out that

the nature and quantum of evidence of sanity which the Government must produce to sustain its burden and take the issue to the jury will vary in different cases. Evidence of sanity which may suffice in a case where the defendant has introduced "some evidence" of insanity may be altogether inadequate in a case where the evidence of insanity is substantial. Before considering the sufficiency of the Government's proof in the instant case, therefore, we must assess the evidence of insanity introduced by the appellant (*ibid* at 7).

This becomes the standard for proof of sanity, after this case.

In this opinion there is also a long citation from *Carter*, and the Court emphasizes its position about lay testimony with the comment that:

Although the testimony of lay witnesses may be competent evidence on the issue of insanity, it does not follow that, in the face of substantial showing of insanity, the Government may send the issue to the jury simply by having two policemen testify, "he looked all right to me." The probative value of any opinion on the issue of insanity depends on

the facts upon which it is based. This is especially true of a lay opinion. (250 F.2d 4, 9-10)

In answer to the Government's argument that some of the psychiatric examinations were conducted too long after the commission of the crime to give experts an adequate basis for their opinions, the Court says,

If the Government feels that psychiatric opinions which come into evidence ought to be based on examinations of greater scope and intensity than has been the practice heretofore, it can and should arrange to have such examinations made *abid* at 9.

This well taken point surely will influence future trial preparation by the Government whenever the possibility of an insanity plea arises. It should be apparent also that this will tend to draw the questions of competency to stand trial and responsibility into closer proximity. Much definition and clarification remains to be done in this area of overlapping policy problems.

Defense argued error in the trial judge's refusal to explain to the jury such things as 1. The meaning of "causal connection" 2. The alternative verdicts at which they could arrive, 3. The kinds of mental illness which would allow them to find the defendant insane (the jury itself requested this information) and 4. A request by defense to charge the jury on the right and wrong question. The failure of the trial judge to grant these requests was a part of the error which caused the Court of Appeals to reverse and remand for retrial.

Williams v. U. S. (250 F.2d 19 [1957]) is an interesting case because of its implications for criminal treatment (16). Dallas Williams is a persistent recidivist who had spent 20 of his 39 years in jail, and whose current offense had been tried 5 times, with 3 appeals. Each of the prior convictions had been reversed because of improper determination of his competency to stand trial. At the time of his third appeal he had already been confined 7 years—the maximum sentence in his first conviction. In this opinion, the Court ordered the trial court to dismiss the indictment because of the Government's failure to give defendant his constitutionally guaranteed right to a

speedy trial. In doing so they say (Bazelon, J.)

Considering the pattern of violence characterizing appellant's behavior since his adolescence and the Government's justifiable concern with his criminal recidivism, commitment of the appellant to a mental hospital might well have been the wisest and most desirable disposition of this case (ibid at 26).

It is open to the Government, however to proceed for a civil commitment under D. C. Code § 21-326, if it considers that, with Williams at large in his present state, "the rights of persons and of property will be jeopardized or the preservation of public peace imperiled and the commission of crime rendered probable" (ibid at 26).

After the *Williams* case there follows a series of cases appealed on such issues as, 1. Proof of sanity in the face of substantial evidence of insanity, 2. A motion to acquit, the jury verdict notwithstanding, and 3. An appeal to set aside a writ of habeas corpus, granted to a man who had been committed following a successful insanity plea. Time does not permit detailed exposition of these cases, although they provide interesting highlights to the general development of these aspects of D. C. law. Distributed among the cases described above there is also a series of cases involving the question of competency to stand trial (17).

By early 1958 the impact of these opinions had begun to filter down to the level of the trial courts and the Court of Appeals' efforts to clarify the law involving the insanity plea began to bear fruit. Early in that year there were several cases in which the trial judge directed a verdict of not guilty by reason of insanity, and several defendants were acquitted by the jury with the same verdict. The final case I shall discuss, was the first one in which a jury found a "pure" sociopath, not guilty by reason of insanity. John Leach (*U. S. v. Leach* Cr. No. 450-57 [1958]) was indicted for robbery, tried in November, 1957, and committed to St. Elizabeths. In April of 1958, he filed a writ of habeas corpus, and the District Court ordered his release. The superintendent of St. Elizabeths appealed this action and in *Overholser v. Leach* (257 F.2d 667 [1958]), the Court sets out the standard for release of a

person following commitment as "not responsible." They state:

The phrase "establishing his eligibility for release," as applied to the special class of which Leach is a member, means something quite different from having one or more psychiatrists say simply that the individual is "sane." There must be freedom from such abnormal mental condition as would make the individual dangerous to himself or the community in the reasonably foreseeable future (ibid at 670).

This is a sweeping standard which raises the same spectre as do the "sex-psychopath laws." The relationship of such a commitment to the availability of treatment, the potential duration of such a commitment, and other similar problems, must await the further development of experience as well as law.

We can see from the foregoing that the Court of Appeals in its decisions since *Durham* has systematically dealt with and clarified a great many of the problems raised by the new test for criminal responsibility. The dire results predicted by many have not come to pass, and the criminal process appears to be proceeding in an orderly, and considerably enlightened manner in this jurisdiction. Though full utilization of the opportunities offered by *Durham* is just beginning, there are definite signs that this rule will facilitate greatly the disposition of criminal offenders in whom there is mental illness. This can lead potentially to a single systematic method for criminal adjudication which will make possible the complete individualization of treatment for offenders. It will leave the test for responsibility in a flexible state where it may be altered and updated constantly as behavioral science knowledge advances. It will put pressure continually upon both prosecution and defense to present their case in language which is communicative to the fact triers; not in magical formulae which no one can really understand.

While no major jurisdiction has yet adopted *Durham*, many have had to exert strong pressure to resist it (18). These courts have gone to great lengths to prove why they should not abandon *M'Naghten*. Psychiatrists should recognize this as the

earliest stage of acceptance, and the successful experiment in the District of Columbia with its progressively developing law should speed this change.

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DISCUSSION

CHARLES SAVAGE, M.D. (Palo Alto, Calif.)—The *Durham* decision was greeted with tremendous acclaim 5 years ago by the idealist who saw in it a Bill of Rights for the mentally ill, and by the villain, who as Cicero points out "Inevitably seeks justification for his crime in some natural provision of rights." It was also greeted with grave apprehension by lawyers. The high hopes of the former and the dour expectations of the latter have all been confounded by the

development of the Durham decision.

Dr. Watson has given us a thorough and scholarly analysis of the Durham decision and its development and vicissitudes during the past 5 years. He has rightly stressed the communication difficulties between psychiatrists and lawyers, and the tendency of psychiatrists to speak like lawyers, and of lawyers to speak like psychiatrists. If I were to make any criticism of this paper, it would be that Dr. Watson falls into the same error of which he complains. His paper speaks the language of the law rather than of medicine. I regret that his very thorough analysis could not have included some reference to psychiatric opinion more modern than that of Isaac Ray. But while I have nothing but praise for Dr. Watson's analysis, I have sometimes thought of the Durham case as the worst thing to come out of Washington since the Dred Scott Decision. It arises from the same humanitarian impulse which seeks to resolve a social dilemma by a *tour de force* of judicial legislation. Though widely heralded as bringing legal psychiatry more in line with modern psychology, it actually does no such thing. It is a peculiar mixture of Aristotelian faculty psychology, metaphysics, mysticism, and mediaeval theology. Were I a lawyer I would also hazard the opinion that it is not very good law either.

Dr. Watson has commented on its vagueness. It is indeed vague particularly in the matter of the first test of responsibility: that of mental illness. There are very few people who could not qualify under this test, and they might run the risk of being diagnosed as suffering from the "normal neurosis." Dr. Funkenstein has told us how the people of Burma are predominantly paranoid, and incidentally have a high homicide rate. Would it not perhaps be possible to qualify an entire population under the Durham test of responsibility?

However, as Dr. Watson has shown, this vagueness, which I would characterize as extreme has proven no barrier to its adoption. In extreme cases there will be general agreement among psychiatrists. It is in the borderline cases such as the sociopaths where there will be wide disagreement: the same cases which caused us great difficulty during the old M'Naghten days.

But even if one can get general agreement as to the presence or absence of mental illness, (which is possible, if one can get general agreement as to the definition to be used), there is no possibility of answering the second question posed by the Durham decision: is the crime the product of a mental illness. I can see this question as only sheer mysticism if not madness. How can a crime be the product of a mental illness? Crimes are committed by people, not by mental illnesses. It is as though the mental illness were some daemon residing within the head which mediated some behaviour and not others. As Dr. Weinstein has pointed out, one cannot even tell which part of behaviour is mediated by an epileptic focus.

The Durham decision merely restates the principle of the M'Naghten Decision in different language. Both assume that one is naturally endowed with freedom of the will which may however be overturned temporarily or permanently by illness. Both make implicitly the declaration that if one chooses the evil side of one's own free will, then he may expect the wrath of Judgment Day.

This is hardly consistent with a deterministic scientific view of behaviour. But it is certainly consistent with Judge Bazelon's position which he has stated as follows: "Juries will continue to make *moral judgments* still operating under the fundamental precept that our collective conscience does not allow punishment where it cannot impose blame."

This is neither good sense nor psychology. This hopelessly confuses the laws of the state and the laws of God, which presumably were separated some time ago by Hobbes. It ignores the fact that punishment can be quite effective without any necessity of attaching blame. As Dr. Richard Board of Washington has put it, "Liberalized criteria for establishing criminal responsibility as represented by the Durham decision are but siren songs, luring the psychiatrist from his deterministic science to pose as an expert on theological matters. Where in the range of psychodynamics does moral responsibility suddenly or gradually appear?" Here lies my only quarrel with Dr. Watson. The psy-

chiatrist, when he testifies in a trial of criminal responsibility, *does testify about moral guilt*, whether he likes it or not.

I have stated above why the Durham decision should be grounds for disquietude on the part of any psychiatrist. The grounds for discontent for the villains are contained in the important decision: *Overholser vs. Leach* which is the counterpart to *U. S. vs. Leach* where Leach was found not guilty by reason of insanity due to "pure" sociopathy. *Overholser vs. Leach* established that sociopathy is grounds for continued commitment. I wish Dr. Watson had had more time to devote to this case which is crucial to the development of the Durham decision, and as he says: "is a rather sweeping standard which no doubt raises the same spectre as some of the 'sex psychopath' laws." I suspect that criminals and their lawyers may discover, as a result of this decision, that a short term in a well run prison would be far more salutary than indefinite commitment to a hospital for the criminally insane.

This raises the happy prospect that good may eventually grow out of evil, that the Durham decision, bad as it is, will initiate a series of changes which will lead to its

own abandonment, that not guilty by reason of insanity will disappear as a plea except in capital cases. Then if we could but begin to believe in the lofty moral sentiments that we pay so much attention to, we might obey the fifth commandment and abolish capital punishment, and with it abolish insanity pleas altogether.

When we realize that salting away the sociopath for a long time in a mental hospital is no answer, we may even get around to reforming our penal system. And I can think of no better way to start than to re-read Dr. Solomon's last year's address on the evils of large overcrowded hospitals and recognize that it applies with equal force to prisons.

When this happy event occurs, we can resign from the arena of theology into which Judge Bazelon has cast us as experts, and resume our role as physicians and scientists who may be hopefully able to advise the court on the sentencing and disposition of criminals. The jury could stick to determining matters of fact; the judge could return to the administration of justice. Moral judgments are far too important for men to assess; their assessment should be left to God.

THE PLACEBO EFFECT IN THE HISTORY OF MEDICAL TREATMENT : IMPLICATIONS FOR PSYCHIATRY

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INTRODUCTION

The interest in the placebo effect has increased considerably in recent years. More articles have appeared in the last 4 years (34 during 1954-1957) than in all previous years combined (22 prior to 1945) (1, 2). Indices, journals, texts and abstract journals are increasingly including the word placebo in their lists of references (1, 2). The word placebo appears more frequently in the title of articles and it is becoming a commonplace in research as it has been a commonplace in medicine for a much longer period of time (3, 4, 5). A placebo control is included in double-blind studies which also are appearing more frequently in scientific literature.

This paper is a shortened version of the first of several papers on the placebo effect (2). Our concern in this paper will be limited primarily to an examination of the historical data. This is important, for as stated by Santayana, "Those who forget the past are destined always to repeat it."

HISTORY AND DEFINITION OF THE WORD PLACEBO

Let us first trace the history of the word placebo (6, 7, 8). It is the first person singular of the future indicative of the Latin verb "to please," the word "placebo" being equivalent to the phrase "I shall please." The first use of the word dates back to at least the 13th century, appearing in the Vespers for the Dead in the Roman Catholic service. It was used in the sense of "I will walk before . . ." or "I will please . . ." It is then found in phrases and nouns by Chaucer and Scott suggesting sycophancy and servility. It is defined as "a commonplace method of medicine" in the 1787 edition of Quincy's Lexicon and in the Philadelphia Medical Dictionary published in 1808 by John Redman Coxe. Pepper (8) points out that this definition may illustrate

the earliest stage of doubt concerning the efficacy of prescriptions of those days, and an approach to the frank admission of a quarter of a century later which appeared in the 1811 edition of Hooper's Medical Dictionary with the definition of the placebo as "an epithet given to any medication adopted more to please than to benefit the patient." Almost all definitions in contemporary medical dictionaries are inadequate. The usual definition, with slight variation, is similar to that appearing in the 1951 Dorland Medical Dictionary (9), where it is defined: "An inactive substance or preparation, formerly given to please or gratify a patient, now also used in controlled studies to determine the efficacy of medicinal substances."

Recent investigators have elaborated further on the characteristics of placebos (3, 5, 11-13). The most widely known type is the "pure placebo." It is an inert substance such as the lactose or sugar tablet and the distilled water or saline injection which is physiologically, biologically and organically inactive. Another more subtle and often unrecognized type is the "impure" or "adulterated placebo" which contains some active ingredient, but which has no effect on the patient's illness. It may contain a truly active substance but be given in inappropriate circumstance or inadequate dosages. The majority of placebos are of this type, and include medication or procedures for every disease and system of the body. A placebo may be a drug which the physician knows to be a placebo, but which the patient believes to be potent. These may be either "pure" or "impure placebos." A second kind is the placebo which both the patient and the physician believe to be potent, but which is really inert. These are usually "impure placebos," the most frequently used type, and probably the most effective. Another type of placebo is that which both the patient and the physician believe in, but which is actually harmful. One need only remember

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the radium injections given as tonics in a previous era which have caused sarcomas in a number of patients in recent years.

A placebo may be ingested, injected, inserted, inhaled, applied or be any procedure offered with therapeutic intent(8). Thus all treatment procedures can result in a placebo effect(3, 5, 8, 10-14). This may be the only effect, the major effect, a minor effect, or not take effect at all. The placebo effect, if it occurs, may be positive or negative, *e.g.*, the patient getting better or becoming worse(5).

Some of these thoughts have been incorporated in a recent and improved definition of the placebo as, "a preparation containing no medicine (or no medicine related to the complaint) and administered to cause the patient to believe he is receiving treatment"(15).

DEFINITION OF THE PLACEBO EFFECT

For the purposes of this paper, let us define the placebo effect as the psychological, physiological or psychophysiological effect of any medication or procedure given with therapeutic intent, which is independent of or minimally related to the pharmacologic effects of the medication or to the specific effects of the procedure, and which operates through a psychological mechanism.

PRESCIENTIFIC MEDICAL TREATMENT

Medication always appears to have been of importance to man. Sir William Osler (16) felt that the desire to take medicine was one feature which distinguished man from his fellow creatures. It is probable that whatever beneficial effects accrued to man's first medication could only have been due to the placebo effect(13). Of course we do not know anything about the nature of man's first medication, nor anything about the first physician. Historians, however, attribute the earliest portrait of a physician to Cro-Magnon times in the year 20,000 B.C.(17, 18). Obviously this horned, tailed hirsute and animal-like apparition had great psychological effect, and it is likely that the medication used by this physician was principally as a vehicle to enhance the psychological or placebo effect and without any intrinsic merit(13). Al-

though a surgical procedure in our times has much intrinsic merit it also has a profound psychological or placebo effect (13-19). One has only to remember the solemn, tense and magical atmosphere that characterizes the usual lay-dramatization of surgical procedures. It can be said that one common feature that links ancient and modern medicine is the placebo effect(13).

The history of medical treatment, although concordant with scientific progress in general, is at the same time incredible. In ancient Egypt, according to the Ebers Papyrus, in 1500 B.C., patients were often treated with medication such as "lizard's blood, crocodile dung, the teeth of swine, the hoof of an ass, putrid meat and fly specs"(11). No treatments of specific value are found in all the pages of Hippocrates(10). In ancient Babylonia gastric complaints were treated by pouring burning juice of cassia over the patient(20). In the 7th century, Paul of Aegina(21) outlined the use of blood in treatment: pigeon and turtle blood for ocular hematomas and during trephination; owl blood for dyspnea; bat blood for preserving the breasts of virgins; bat, frog, chameleon and dog-tick blood to prevent breast hirsuteness; goat blood for dropsy and kidney stones; domestic fowl blood for cerebral hemorrhages; lamb blood for epilepsy; kid blood for hemoptysis; bear, wild goat, buck goat and bull blood for apostemes; land crocodile blood for visual acuity; duck, stag and goose blood for deadly poisons. It is well-known that bleeding was a very common remedy for a multitude of conditions. Leeches were only one of many methods that were used. In 1827 alone, 33,000,000 leeches were imported into France because domestic supplies were exhausted(22). In the 13th century we read about a cure for gout consisting of oil of skinned puppy, vulture, goose, bear, fox, wax and 7 other substances(20). In the 17th century editions of the London Pharmacopeia(21) we read about the use of worms, lozenges of dried vipers, powders of precious stones, oil of bricks, ants, wolves, spiders and earthworms, fur, feathers, hair, human perspiration, saliva of a fasting man, spider webs, wood lice, moss scraped from the skull of a victim of violent death, crabs'

eyes and claws and human urine. In the 17th and 18th centuries we note the prescription of "hotte horse dung" for ague, goose dung for baldness and sheep dung for gall stones (19).

Despite these useless, abhorrent and often harmful drugs, and the continued prescription of the "flesh of vipers, the spermatie fluid of frogs, horns of deer, animal excretions, holy oil" (12) and other bizarre substances, the physician continued to be a useful, respected and highly honored member of society.

Let us look at some of the most famous medications used by physicians up to the 16th and at times during the 18th centuries (14, 17, 19, 21, 23-29).

Unicorn Horn: The fabled unicorn horn was used to detect and protect against poisons in wines and foods. It usually came from the ivory of the narwhal or elephant. There are records of these horns selling for as high as \$75,000. They disappeared from use in the 17th century.

Bezoar Stones: Bezoar stones came from Arabic medicine to Europe and were used for poisons of all types, melancholia, and as a universal antidote. According to legend, a bezoar stone was the crystallized tear from the eye of a deer bitten by a snake. In reality they were a gall stone or concretion found in the stomachs and intestines of animals such as the goat. These stones were often counterfeited, pebbles being used instead, and there are records of individuals being tried and punished for this offense.

Mandrake: Mandrake was used by the early Babylonians and Hebrews, by Nero and was mentioned by Shakespeare. Its principle use was as an anesthetic and aphrodisiac. According to popular superstition the mandrake shrieked when pulled from the earth and anyone hearing the shriek went mad. To avoid this a dog was tied to the plant and in seeking to escape pulls out the root. As a further precaution a horn is blown to drown out the shriek. Its use as an aphrodisiac is suggested by the existence of male and female mandrakes.

The Royal Touch: The "laying on of hands" as a treatment for illness is one of the oldest and most persistent of methods

which even extends into contemporary times. The Royal Touch, in which a regal and royal personage touched a patient with the King's Evil (usually scrofula but at times extended to all types of illnesses), was perhaps the most famous of such procedures. It first appeared in 300 B.C., entered Europe in 500 A.D. and England in the 11th century. Thomas Aquinas, by testifying to the cure of a page by King Clovis in the 5th century, helped to sanctify the practice. Samuel Johnson was touched as an infant but not cured. Many quarrels occurred over lineage and the right and ability to cure by touching. Patients often were carefully screened and only one treatment per person was allowed (thus decreasing the possibility of failure). King Charles II touched 90,798 patients during 19 years of his reign in the 17th century. Of this ritual, Richard Wiseman, the surgeon to Charles II lamented in his treatise on scrofula, "The weakness of our ability when compared with his majesty's who cureth more in any one year, than all our surgeons of London have done in an age." This practice disappeared in England during the 18th century and in France during the 19th century.

Powdered Mummy: Powdered mummy presumably came from a ground-up mummy in Egypt. It resembled and tasted like rosin, and was used to heal wounds and as an almost universal remedy. Several official conferences complained about the adulteration of the powdered mummy from Egypt (and the impurity of the unicorn horn as well), probably when their effectiveness decreased. Paré, who was influential in undercutting many of these delusory beliefs, replied, "It doesn't make much difference . . . because our French bodies are just as effective . . . , none of them being of any value."

These medications were very expensive and only the wealthy could afford them. Theriac and Mattioli contained up to 63 and 230 ingredients respectively, all of which were worthless. Usnea (the moss scraped from the skull of a hanged criminal), eunuch fat, fly specs, human and animal excretions were some of the more unpalatable drugs. Medical reasoning was primitive: the lungs of a fox, a longwinded

animal, was given to consumptives; the fat of a bear, a hirsute animal, was prescribed for baldness; mistletoe was prescribed for the falling sickness because it grew on the oak and hence cannot fall. Despite the ignorance and superstition, physicians must have benefited their patients because they continued to be held in high esteem.

Consider the treatment by the physicians of his day that Charles II endured:

A pint of blood was extracted from his right arm, and a half-pint from his left shoulder, followed by an emetic, two physics, and an enema comprising fifteen substances: the royal head was then shaved and a blister raised; then a sneezing powder, more emetics, and bleeding, soothing potions, a plaster of pitch and pigeon dung on his feet, potions containing ten different substances, chiefly herbs, finally 40 drops of extract of human skull, and the application of bezoar stone; after which his majesty died (30).

(For a more complete description, see Haggard (17).)

Astute observers of their time, such as Maimonides (31), Montaigne (10) and Molière (24) were able to perceive the serious shortcomings of medical practice. As late as the 17th century, however, a contemporary of Molière, Robert Boyle, the father of modern chemistry, after expunging many questionable remedies from the revised pharmacopoeia, included the sole of an old shoe "worn by some man that walked much" which was to be ground into a powder and taken for stomach ache (25). Oliver Wendell Holmes said as recently as 1860, that if nearly all the drugs then in use "could be sunk to the bottom of the sea it would be all the better for mankind and all the worse for the fishes" (32). Despite this, sick patients continued to submit to purging, puking, poisoning, cutting, cupping, blistering, bleeding, freezing, heating, sweating, leeching and shocking.

One could expand at considerable length on other such examples. Today we know that the effectiveness of these procedures and medications was due to the placebo effect.

In the 17th century cinchona bark, which contains quinine, was introduced as a treatment for febrile infections. Sydenham, by demonstrating that it was only

specific for fever of malarial origin, contributed to the end of Galenism and the beginning of scientific medicine (8, 17, 24, 27, 33). It may be considered that this was the first drug that was not a placebo (8, 10, 11), because previous to this there was no way to distinguish a placebo from a non-placebo (8).

DISCUSSION

If it can be said that scientific medicine truly began only 7 or 8 decades ago (11, 14, 30), we are led to the inescapable conclusion that the history of medical treatment for the most part until relatively recently is the history of the placebo effect, since almost all medications until recently were placebos.

The frequent reference to the importance of the "art of medicine" (13, 18, 34-36) implies an understanding of the placebo effect. This is also true of Hippocrates' observations on the "art of medicine" (37) although none of the drugs used by the latter have proven to be of any use (10). One cannot help notice the rash of treatment methods that successively appear on the medical scene, only to be relegated to limbo and the status of curiosities in the history of medical treatment (11, 18, 36, 38-41). This has led to the famous admonition: "you should treat as many patients as possible with the new drugs while they still have the power to heal." This implies a knowledgeable appreciation of the placebo effect, a statement which has become so famous that it has been attributed to Trousseau (11, 42, 43), Osler (44), Sydenham (45) and Nolan D. C. Lewis (38).

Although medicine was integrally related to the finest scientific, religious, cultural and ethical traditions in most periods of history, and despite the ephemeral and or quite quantitative appearance of drugs or procedures which were truly helpful, one may ask how physicians maintained their positions of honor and respect throughout history in the face of thousands of years of prescribing what we know today to be useless and often dangerous medications? Indeed! this would have been a major accomplishment of the physician were it not for the fact that despite the uselessness of the drugs and procedures,

nevertheless, physicians did help their patients (10, 11).

We are led then to another conclusion: that the potent placebo effect which characterizes the history of medical treatment is related, in some as yet unelucidated way, to the doctor-patient relationship (4, 5, 10, 11, 46-48). Houston (10) views the physician as the therapeutic agent by which cures were effective in the past, since the therapeutic procedures were placebos. Findley (11) says, "... that the physician is a vastly more important institution than the drug store," and that even today, "Despite the scientific achievements of this century the physician himself is still the most important therapeutic agent." It has been aptly observed that the physician's most important therapeutic agent is his medical degree which he receives upon graduation from medical school.

Houston (10) remarks on the many reminders of the historical past in the contemporary successful existence of the nostrum vendors, chiropractors and myriads of other varieties of quackery. He also notes that no one considers applying the principles of osteopathy to animals, where it would certainly fail, because the principles are effective only when they involve a human interpersonal relationship.

To the element of the doctor-patient relationship, we must add the importance of faith which is reflected, in part, by the fact that the best educated, major religious group in the United States is able to deny the rational efficacy of any treatment or medicine and to assign all treatment benefits to faith.

Another factor contributing to the "success" of these physicians in the past must be postulated. Spontaneous recoveries and remissions "can" occur in the course of almost any illness and "may" be unrelated to the administered drug, doctor-patient relationship and placebo effects. It is very difficult, however, to isolate this factor because of the potential placebo effect in every therapeutic relationship. In addition, the belief of the physician and/or the patient that recovery is a consequence of some activity of the physician would tend to increase the effect of placebos in general. Although this factor must be postulated it

does not negate what is thought to be the more important influence of the doctor-patient relationship in the history of medical treatment.

We would have to mention also the importance of enthusiasm, expectation, conviction, suggestibility, personality and psychodynamic factors, and the unconscious and preconscious attitudes of both the doctor and the patient (2). Other factors have been suggested (2). Much research is required in order to delineate the specific factors involved.

IMPLICATIONS FOR PSYCHIATRY

These historic considerations have important implications for, and are clearly applicable to, all research and the evaluation of all therapeutic methods. This is especially true of psychiatry which has inherent factors which maximize placebo effect potentialities. The placebo effect is a notorious concomitant of newly introduced therapeutic methods, and almost all treatment methods used in psychiatry today have been introduced relatively recently. The placebo effect is maximized and determined in part by the character of the doctor-patient relationship. This relationship is particularly close in most methods of psychiatric treatment, and is the major tool in all psychotherapeutic methods of treatment.

Many methodological variables are taken into consideration in contemporary research and evaluation of therapeutic methods. Unfortunately, however, surveys of medical (and other scientific literature) reveal gross inattention to the placebo effect as an important methodological variable (34, 49, 50). This factor requires special attention because it is always present in therapeutic situations and extremely potent in its consequences (5, 8, 10, 13, 51). It requires the use of placebo controls, the double blind procedure, statistical analysis and consultation and concern with other appropriate methodological principles (52).

This paper has emphasized only the tendency to overevaluate the efficacy of therapeutic methods. Although this is the most marked tendency, one must mention also the influence of negative placebo effects contributing to an underevaluation of true

ly helpful therapeutic methods. Occasional records do occur of ancient medicine having stumbled upon useful drugs. The inability, however, to scientifically evaluate the specific usefulness of the drug resulted in its loss to future generations. The ancient Chinese gave ground-up "dragon bones" to children with convulsions(11); burnt sponge, which contains iodine, was used to treat simple goiter(11); an extract of the meadow saffron, which contains colchicine, was used in the treatment of gout in the 6th century(23). In addition, these truly helpful treatments were lost to future generations, in part, because of the placebo effects of other useless medication.

Today we know that negative investigatory attitudes (negative placebo effects in part) can determine negative results. The problem of evaluation can be further complicated. An over enthusiastic investigator may come away with positive results for a great number of conditions, only a few in reality responding to the specific effect of the treatment, the others responding to the non-specific effects stemming from the placebo effect. Another investigator may "fortuitously" study the effect of the treatment on those patients who are positive placebo reactors, and come away with negative results, erroneously rejecting the whole treatment.

Physicians and investigators, to some extent, in one form or another, recognize the widespread existence and potent influence of placebo effects. However, there is a marked tendency for the latter to recognize placebo effects more easily in the work and practice of others than in their own work and practice. This is illustrated by the finding that 3 times as many physicians are of the opinion that they used placebos less frequently than their colleagues(48).

I believe that if we keep these thoughts in mind we will appear as wise 100 years from now as do the compilers of the *Paris Pharmacologia* of a century ago who said,

What pledge can be afforded that the boasted remedies of the present day will not, like their predecessors, fall into disrepute, and in their turn serve only as a humiliating memorial of the credulity and infatuation of the physicians who recommended and prescribed them (53).

SUMMARY

A brief history of the word placebo was presented and the placebo effect was defined. Characteristic examples of prescientific medical treatment were described. The following conclusions were reached: The normative history of medical treatment until relatively recently is the history of the placebo effect. Although physicians prescribed what we now know to be useless and often dangerous medications and procedures for thousands of years, they maintained their positions of honor and respect throughout history because they did help their patients. This was possible because of the potent placebo effect. The placebo effect is related to the doctor-patient relationship and a number of other factors derived from this relationship. The placebo effect is maximized by the closeness of the doctor-patient relationship in psychiatric treatment. Therapeutic efficacy should be studied and evaluated in the light of the methodological principles stemming from this knowledge.

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DRUGS AND PSYCHOTHERAPY¹

PAUL H. HOCH, M.D.²

When we discuss the relationship of drugs to psychotherapy we must decide first when drugs should be used, when psychotherapy should be used, and when the use of a combination of both is indicated. Today drugs are used extensively in the treatment of the psychoses, and especially in schizophrenia, but also increasingly in depressions. The kind of treatment to be applied will have to be decided based upon the clinical manifestations of each individual case. Generally speaking, a psychiatrist will use drugs in the major mental disorders and psychotherapy as an adjunct, whereas in the psychoneuroses he will use psychotherapy as the main treatment and if necessary, drugs as an adjunct. However, the indications as to when drugs should be employed and when not are not clearly drawn. In major mental disorders where it is far more difficult to reach the patient and where the symptoms overwhelm him and prevent him from functioning, the use of drugs is indicated much more than in most patients who have adjusted and are able to maintain their professional and social activities.

Drugs are now used extensively in schizophrenic patients in public mental hospitals. They usually receive one or another of the tranquilizing drugs and many show an impressive improvement. The amount of psychotherapy these patients receive is usually limited and is confined to reassurance or a discussion of their problems with the therapist. In many mental hospitals a so-called therapeutic milieu is organized where the personnel in general partakes in some activity with, or in relationship to, the patient. In a broader sense this can be considered psychotherapeutic, but, of course, none can be labelled as organized psychotherapy. A very few patients in public mental hospitals can receive a systemic and organized form of psychotherapy on an individual level.

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., April 27-May 1, 1959.

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Of course many could participate in group therapy, but nevertheless a large number of patients receive drug therapy with little psychotherapy.

This immediately brings up the important question as to how much psychotherapy is needed for psychotic patients being treated with drugs. To what extent can drugs replace psychotherapy and vice versa? The psychotherapy of the functional psychoses rests on the shaky assumption that these disorders are of psychic origin and therefore, similar to the neuroses, should be treated with psychotherapy. Application of psychotherapy in the functional psychoses is very complicated in public hospitals. Its reach is limited and the most difficult problem is the lack of adequate personnel which makes it an impossible undertaking. The statistics indicate that many schizophrenics show marked improvement and even an elimination of symptoms with drug treatments alone. On the other hand, the relapse rate of such patients is quite high, reaching approximately 30%. However, if they receive psychotherapy in addition to the drug treatment this relapse rate can be cut in half. It appears there are schizophrenic patients who have the ego strength to take over when the drugs reduce the gross psychotic state and who are able to adjust to different environmental situations. In a considerable number of schizophrenics, however, after eliminating the gross symptomatology of the disorder, we still see many adaptational difficulties remaining in relationship to the environment. They often have conflicts, feelings of inferiority, inability to formulate goals, motivational confusion, ambivalence and contradictions. These patients benefit a great deal from psychotherapy.

The problem usually is not mentioned as to what extent psychotherapy can be applied in schizophrenic patients who are being treated with drugs. Seemingly this is not a great problem, most likely because the goal of the therapy is not a reconstructive one and therefore the therapist does not feel that the administration of the drug

interferes to any large extent with the psychotherapeutic process. The role of drugs in these cases is not clearly perceived but it is generally assumed that they suppress some of the symptomatology of the patient which interferes with psychotherapy and therefore makes the patient more amenable to such an approach. I may add there are some physicians who feel that if there is enough skilled personnel available, these patients do not need drugs and the reduction of the symptomatology can be accomplished by other means. Some investigators clearly claim that if you have enough personnel, drugs can be replaced and of course it is also true to some extent that drugs can replace personnel. There is definitely an overlap. This is always present if we manipulate the human psyche which is open to influence on many levels and it is possible to approach it psychotherapeutically and at the same time, chemically. The issue that will have to be discussed is which is more efficient and which is more feasible in a given case. However, we should not use vague or glib generalizations.

We feel that the combination of drug treatment and psychotherapy is of special importance in schizophrenic patients, many of whom are treated in outpatient setups and in private practice. Many of these schizophrenic patients are very anxious, overwhelmed by their conflicts and most of the time only partially able to be in contact with the therapist. In most of these patients many ego supportive measures have to be applied. Up to a point these supportive measures can be replaced by drugs. The reduction of anxiety and the feeling of better functioning helps psychotherapy considerably. The reduction or elimination of secondary symptoms such as hallucinations and illusions also fosters the psychotherapeutic attempts because these patients are difficult to approach and influence psychotherapeutically during the time they show florid symptoms.

It is necessary to keep many patients who need some psychotherapeutic help on a maintenance dose of tranquilizing drugs. I have been especially impressed by the fact that in these patients drug therapy and psychotherapy are complementary to each other instead of being antagonistic. In these

patients the use of drugs has to be adjusted to the psychotherapy. A patient on tranquilizing drugs may show less initiative and drive, but not if the drug is used in its proper dosage; and because the patient is less anxious and perturbed he is able to utilize psychotherapeutic assistance far better than before the administration of the drug. The ability of these patients to utilize psychotherapy under drug treatment is in sharp contrast to the time when no drug was available. The ego supportive measures which had to be carried out, the reassurance which had to be given, the different maneuvers in which the therapist had to engage to overcome the patient's anxiety and preoccupations can be eliminated by the drug in many instances. I feel the combination of drugs and psychotherapy will have its main effective application in schizophrenic patients, in the pseudoneurotic schizophrenic group, and in depressions. After being treated by drugs some will be able to function, but there will be those who will need psychotherapy even though the drugs have reduced or eliminated the feelings of depression.

One of the most controversial points is the use of the drugs in the treatment of the psychoneuroses. I believe that the great resistance in some psychiatric circles to the use of these drugs is essentially based on the psychiatrist's experiences with neurotic patients. I feel that every case has to be individually evaluated. It is obvious that many psychoneurotic patients should be treated without any drug adjuvant because the treatment would not be facilitated if drugs were to be administered. We must distinguish, however, between psychoneurotic patients who function relatively well and are not markedly crippled by the intensity of the different psychoneurotic symptoms. Nevertheless, there are patients—for instance, some phobic ones, where the anxiety is so intense that the patient is quite handicapped and is not able to function even relatively well—when the use of the drugs eliminates the anxiety to such a degree that they are more comfortable and are able to partake of psychotherapy.

Some physicians have expressed the fear that if such patients are rendered comfort-

able by the drug they would lack motivation for psychotherapy. I have not seen this happen. Most of these patients, even though they were more comfortable with the drug, wanted to have psychotherapy and were quite satisfied when the drug was gradually reduced or eliminated. In many instances where the patient only undertakes the drug therapy and does not want psychotherapy the motives are not so much the patient's lack of interest in psychotherapy, as his inability to afford it. In such situations, of course, the patient tries to be content with the use of the drug alone. Occasionally he also may be advised that the drug will take care of all his problems and therefore he does not require any other help. However, most of these patients are aware of the fact that if the anxiety or some other of his symptoms are quantitatively reduced by the drug they still have problems which, so to say, qualitatively speaking, can be adjusted only by discussing some of these problems with the therapist. I believe that this is probably the most important point which can be brought out in relationship to combined treatment. The tranquilizing drugs are able to reduce the amount of anxiety and sensory and proprioceptive bombardment to a level where the patient is able to cope with them. In some patients the reduction of the anxiety and the elimination of the preoccupations permits him to function, but in others, qualitatively speaking, many adjustment problems still remain which the drug does not automatically eliminate and where psychotherapy should be applied. The amount of psychotherapy in these patients is of individual difference and should be regulated in the same manner that the quantity of the drug is regulated in relationship to their needs.

The use of drugs in psychoneurotic patients encounters two main objections: first, that the use of the drug interferes with the transference relationship, and second, that the effects and probable side effects of these drugs interfere negatively with the psychotherapy. I do not believe that the use of a drug necessarily interferes with the transference relationship. I actually feel that if the transference relationship is a good one, the introduction of a drug, even

if it leads to some complications, does not disrupt the patient's relationship to the therapist. The patient feels that every weapon at the disposal of the therapist is used to reduce his symptoms and to help him. Many patients are very appreciative of the fact that their considerable suffering is made more bearable. This usually leads to an enhancement of the transference of the relationship and not the opposite. The idea that the patient has to be profoundly uncomfortable for effective psychotherapy is an old shibboleth which has never been proven and which should be carefully re-examined in the light of newer knowledge. I do not believe that theoretical ballast of this sort should be carried out year after year without the re-examination of the correctness of the foundations.

I may add that here we are discussing psychotherapy and not psychoanalysis. I am sure that even in analytic treatment, drugs can be used if necessary, but providing we assume this would not be "correct" in psychoanalytically treated cases, this prohibition surely does not apply to psychotherapy in general. The question of using or not using a drug in combination with psychotherapy has to be individualized. In my observations I often found that the refusal to combine treatments was not based as much on preconceptions (which in many instances are obvious rationalizations), as on the fact that the therapist has lost touch with these methods and does not know how to give the drugs or is fearful in working in this therapeutic field because of lost proficiency. Advances in medicine are made every day. A physician has the obligation to assimilate the new and connect it with the old. This is sometimes difficult and often the position is taken that everything new is valueless. In my opinion this position is equally as bad as the enthusiastic and uncritical acceptance of every new therapeutic agent. The latter is usually far more often castigated, but this does not mean that the ultra conservative position is the correct one.

The question is often raised how psychotherapy should be integrated with drug therapy from a technical point of view. This has to be approached in the same manner as other treatments based on the indi-

vidual symptomatology of the patient. Nevertheless some general comments can be made. Mistakes are often made in the treatment of these patients in that the drug therapy is entrusted to one physician and the psychotherapy is done by another. The handling of the patient by two therapists who do not fully coordinate these therapies confuses the patient and does not provide him with help. It is rather common that the patient tries to "trap" his therapists into complicating statements, interpretations and recommendations. This, of course, interferes seriously with therapy. I do not believe that the treatment of a patient can be entrusted, so to say, to a committee. I strongly feel that it is preferable if the drug therapy and the psychotherapy are in the hands of one person to avoid the above-mentioned difficulties. In addition the effect of the drug on the patient and the patient's comments on drug action are very important in psychotherapy. The therapist prescribing the drug is then constantly aware of the subtle emotional response of the patient. I do not feel that combining drug therapy with psychotherapy is very difficult provided the therapist acquires a certain amount of working knowledge on the action of these drugs. Usually drugs can be given in amounts which will control the distress and anxiety of the patient. It should not be given in such amounts that the patient's anxiety and tension are completely eliminated. At times the patient will bring up some discussion about the drug and its effects, but in my experience this is only in the beginning of the treatment or perhaps when a change of medication is prescribed.

The use of drugs in psychoneurotic patients may encounter difficulties if side effects on a physical or mental level appear which may affect the treatment. I believe that this is one of the reasons why some psychiatrists do not like to employ drugs in conjunction with psychotherapy. However,

it must be considered that patients with deep rooted anxiety do not respond to therapy quickly and some of them are treated for a long time unsuccessfully. I believe that the patient's faith in the treatment and in the therapist also becomes impaired and in my observations this impairment in a therapeutic relationship is far worse than if the patient develops side effects from a drug which in most instances can be controlled quickly by reducing the dosage or by changing the medication. In addition to the physical complications that some of these drugs can produce we should be aware that there are also psychic side effects. For instance, some of the patients develop feelings of depersonalization, feelings of lethargy and weakness, and in some patients on higher dosages a sensation of restlessness appears. However, all these feelings disappear rapidly when the dosage is reduced. These complications can be readily observed if the patient has regular psychotherapeutic sessions and I do not believe that these complications should be overemphasized or made to appear as too complicated and difficult to handle to rationalize the position that no drugs should be used in conjunction with psychotherapy.

SUMMARY

In summary, I feel there are those cases where drugs can be effectively combined with psychotherapy without detriment to the treatment situation. In fact very often therapy is enhanced if such an integrated approach is used with these patients. Generalizations of do's and don'ts are not applicable. Each patient is a problem in himself. The decision of whether or not to use drugs in connection with psychotherapy should be based on well-conceived clinical judgment. More attention must be paid to such integrated treatment by experts in the field of psychotherapy than has been until recently.

SERUM TOXICITY IN VARIOUS PSYCHIATRIC DISORDERS

JOSEPH WORTIS, M.D.²

INTRODUCTION

Some years ago I became interested in the effect of blood and serum on brain oxidations because blood transfusions seemed to revive patients in irreversible insulin coma. In work published in 1944 I reported that the addition of a small amount of serum (0.25 cc.) to the Krebs-Ringer phosphate glucose solution in a Barcroft-Warburg manometer served to maintain oxidations at a linear rate for as long as 12 hours. Without the addition of the serum, oxidative activity lapsed at about 8 hours. Since recent literature has been suggesting the possibility that the serum in both phenylketonuria and in schizophrenia might be toxic, the present experiments were initiated to determine what effect serum drawn from various patient groups might have on brain oxidative activity.

METHOD

Fresh minced rat brain from 250 gm. white rats was immersed in 2 cc. of Krebs-Ringer phosphate solution containing 200 mgm.% of glucose buffered at Ph 7.38, to which 1 cc. of serum was added. The oxygen uptake at the end of a 2-hour period was measured and calculated on the basis of mm.3 O₂ per mg. of tissue net weight. Ph readings at the end of the run were almost invariably 8.1 to 8.4, due no doubt to loss of CO₂ from the serum. Since the oxidative activity of brain slices, unlike suspensions, is not affected by Ph changes of this range, it is likely the minced brain was similarly unaffected. At any rate, since this was a constant factor in all experiments, the possible depressant effect of this Ph shift on respiratory activity does not impair the comparative significance of the values. The control sera were recruited from a miscellany of cases, including serum specimens taken for pre-marital serological

study, casual specimens sent to the biochemistry laboratories from the general hospital or surgical ward, and from cases of psychopathy, neuroses, conduct disorders, reading disability, epilepsy, delinquency, and chronic brain syndrome. Though the sera for pre-marital testing had been inactivated at 56° C. for 30 minutes, no differences were found between these and other casual specimens, and no differences were found between children and adults, so that all of these together comprised the control group. Specimens from

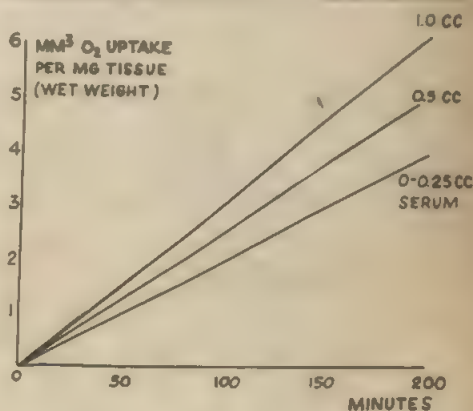


FIG. 1
MAXIMUM ENHANCEMENT OF OXIDATIVE ACTIVITY IS ACHIEVED BY THE ADDITION OF 1.0 CC. OF SERUM.

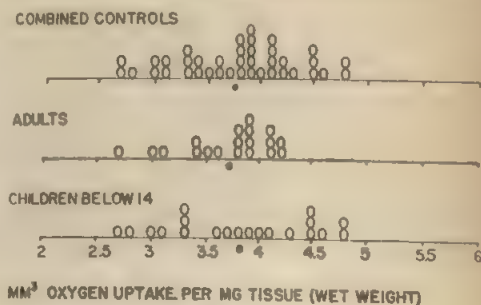


FIG. 2
DISTRIBUTION OF VALUES FOR MM.³ OF O₂ UPTAKE AT END OF TWO HOUR PERIOD, USING 1 CC. OF SERUM OF CONTROLS. DOTS INDICATE MEAN VALUES.

¹ Presented before the Society of Biological Psychiatry, San Francisco, Calif., May 11, 1958.

² From the Division of Pediatric Psychiatry, Department of Pediatrics, Jewish Hospital of Brooklyn. This work was supported by the M. J. Solomon Research Fund and by an Anonymous Donor.

other psychiatric patients were secured from the Brooklyn State Hospital, Kings County Psychiatric Hospital, Willowbrook State School, and Letchworth Village.³ Most specimens were refrigerated several days before use. Almost all schizophrenic subjects were adult; two-thirds of the mongoloid and phenylketonuric cases were adult. Unless the quantity of serum allowed at least 2 samples to be tested with good correspondence in the results, the data were not used; most data are based on the average of 3 specimens checked against 2 thermobarometers. In a few instances only 2 of the 3 manometer readings were averaged, if the 3rd manometer reading varied beyond 33% of the average of the other two, so that a technical fault—such as a leak—could be reasonably suspected.

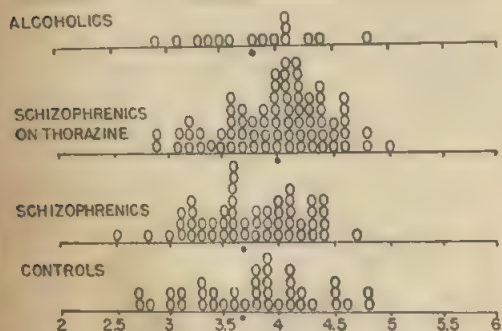


FIG. 3

DISTRIBUTION OF VALUES FOR O₂ UPTAKE FOR A TWO HOUR PERIOD, USING SERUM FROM VARIOUS GROUPS OF SUBJECTS.

RESULTS

No depressant effect was found with schizophrenic serum, though 5 of 6 catatonic patients had low values. Under chlorpromazine medication the values rose, especially in those patients receiving 100 mg. or more per day. Alcoholics and mongoloid subjects showed no change. A depressant effect on the oxidative rate was found when phenylketonuric serum was

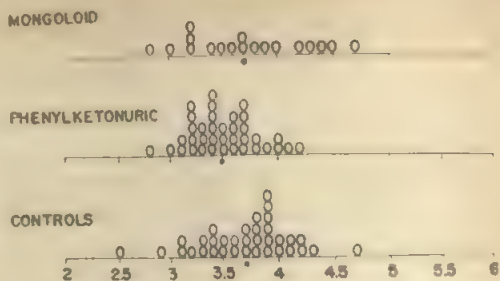


FIG. 4

DISTRIBUTION OF O₂ UPTAKE VALUES WHEN MONGOLOID AND PHENYLKETONURIC SERUM WAS USED.

used, as shown in Figure 4. Phenylketonuric subjects taking chlorpromazine had somewhat elevated values, and were excluded from the series. For the remaining phenylketonuric group the mean oxygen uptake at the end of 2 hours was 3.5, with a standard deviation of .312. The mean and standard deviation for the control group were 3.7 and .427, respectively. The *t* value of the difference between the means is 2.15 and this is statistically significant beyond the .05 level. A similar depressant effect was found when 40 to 80 mg.% of DL- β -phenylalanine was added to normal serum, but other essential amino acids, such as L-tryptophane, DL-methionine, DL-threonine, L-lysine, and L-histidine all produced similar depressant effects in these concentrations.⁴

DISCUSSION AND SUMMARY

The serum of schizophrenic, alcoholic, and mongoloid patients had no inhibiting effect on the respiratory activity of surviving rat brain. The serum of patients treated with chlorpromazine enhanced the respiratory activity. A slight tendency to elevated values found in recently admitted schizophrenic adults who were not taking chlorpromazine may be due to prior medication before admission. Phenylketonuric serum depressed brain oxidations, though a similar effect was induced by racemic phenylala-

³ Thanks are due to Louis Schneider, the late Eric Brown, and Eugene Jackim for very helpful technical assistance. I would also like to express my appreciation to Drs. Jervis, Jacobs, Engelhardt and Beckenstein, of Letchworth Village, Willowbrook, Kings County and Brooklyn State Hospitals for their friendly cooperation.

⁴ Current work (E. Jackim and J. Wortis: unpublished data) indicates that only the D-phenylalanine exercises a depressant effect. Since only L-phenylalanine is involved in these physiological derangements it is altogether unlikely that the depressant action of the serum is due merely to the presence of phenylalanine.

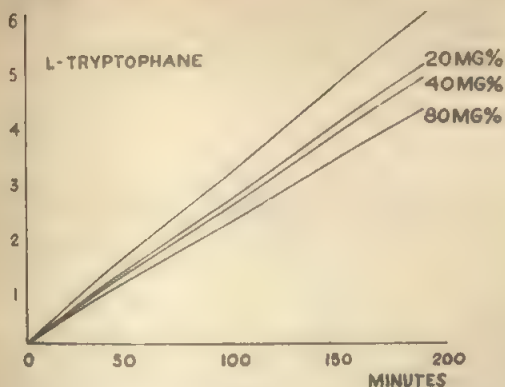


FIG. 5

THE DEPRESSANT EFFECT OF L-TRYPTOPHANE ON RAT BRAIN OXIDATIONS IN A KREBS-RINGER-GLUCOSE-PHOSPHATE MEDIUM CONTAINING 1 CC. OF NORMAL SERUM.

nine in concentrations above 40 mg.% as well as by other essential amino acids. It has been suggested that the depressant action of various amino acids may be due not to a direct effect of the amino acids, but to aldehyde formation. It has also been

known for a long time that a number of toxic amines such as tyramine, phenylethylamine, mescaline, indole and skatol, all inhibit brain oxidations.

The observed phenomenon may explain the general depression of brain oxidations found in vivo in phenylketonuria by Himwich and Fazekas. The low cerebral metabolic rate found in mongoloid children in vivo by these authors may be due to the brain pathology associated with the condition.

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CLINICAL FINDINGS IN THE USE OF TOFRANIL IN DEPRESSIVE AND OTHER PSYCHIATRIC STATES—

BENJAMIN POLLACK, M.D.¹

Roland Kuhn(1) of Zurich, Switzerland, reporting a large series of cases with promising results in the use of Tofranil in the treatment of depressive states, has indicated that this drug is more or less a specific anti-depressive drug although not primarily a stimulant and not a monamine oxidase inhibitor. To date there has been no satisfactory replacement for electroshock therapy in the typical depressive state. The discovery of a drug which would be helpful in such conditions would be of paramount importance, and would permit more extensive treatment in the psychiatrist's office and avoid the necessity for hospitalization. The interest produced by iproniazid and other monamine oxidase inhibitors has furthered the research in this field in an attempt to elaborate a compound which would be free of dangerous complications.

Tofranil(2), known also as imipramine and G 22355, is a recently synthesized psychotherapeutic agent which has now had fairly extensive trials in Europe and more recently in this country. The mode of action of this drug is not quite clear, except for its central nervous system action. It is, however, not essentially a stimulant but in exceedingly high doses in animals can cause tremors, rigidity and respiratory arrest. To do so it is necessary to use doses 20 to 30 times the therapeutic dose used in clinical treatment. This drug produces only a slight potentiation of barbiturates and little or no hypothermic effect. In animals there is evidence of some anti-convulsive effect which protects against metrazol and electroshock in animals when used in very high doses, but here again in humans electroshock can be given readily with little or no change in the dose. It does not increase norepinephrine or serotonin in the brain and is not a monamine oxidase inhibitor. There are some slight peripheral anesthetic qualities and it may therefore produce some peripheral paresthesias or some slight anesthesia of the cornea. Forty percent is

excreted as 2 metabolites in the urine and less than 2% is excreted unchanged. It is rapidly absorbed and it likewise disappears from the body in 24 hours. The Forrester reagent test of the urine is negative. It has no influence on conditioned responses.

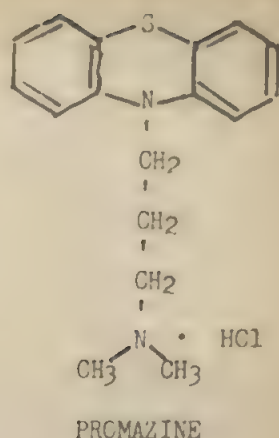
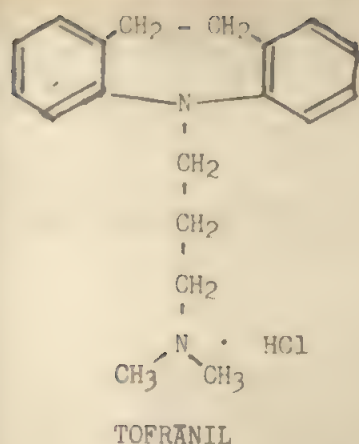
Long-term observations with injections in animals of huge doses have not produced hematological or hepatic changes. The lethal dose in animals is estimated as somewhere between 400 and 1200 mgs. per kilo which, of course, would far exceed the clinical dosage, so that there is a very wide margin of safety. It would appear that it is absorbed almost as rapidly orally as parenterally. It can be used both intramuscularly and intravenously, but in the former it is quite irritating.

Its formula resembles that of promazine in which the sulphur atom has been replaced by a dimethyl chain. (Graph 1)

The use of Tofranil was first begun at the Rochester State Hospital in September 1958, 6 months ago. Since this was a new drug which had had few clinical trials in this country, an attempt was made to ascertain its usefulness by giving it not only to patients suffering from various depressions but to those who had a variety of other mental illnesses. Approximately 273 patients are involved in the results. These patients consist of acute and chronic disorders. The drug was administered to practically every newly admitted patient who was suffering from depressive symptoms without regard to the diagnosis. It was also used for various schizophrenic conditions and organic conditions, particularly where there were elements of anxiety or depression. The diagnoses of the treated cases are shown in Table 1.

Treatment was given in various parts of the hospital, and this report is a compilation of the observations of many of the personnel from the various services. For the most part, the patients were treated with relatively low doses of 25 mgs. of Tofranil t.i.d., particularly in the acute cases and with 50 mgs. t.i.d. in the more

¹ 1920 South Ave., Rochester 20, N. Y.



GRAPH 1

TABLE 1

DIAGNOSIS	
Involuntional Depression without agitation	25
Involuntional Depression with agitation	21
Manic-Depression	44
Reactive Depression	7
Organic Depression	52
Psychoneurotic Depression	19
Senile Depression	5
Schizoaffective Depression	41
Unspecified Depression	21
Schizophrenia	19
Alcoholism	10
Other not Depressed	9
	273

Two-thirds of the treated patients were over 45 years of age (Table 2).

TABLE 2

Age	Male	Female	Total
15-24	1	7	8
25-34	12	25	37
35-44	15	28	43
45-54	19	34	53
55-64	25	32	57
65 +	8	67	75
	80	193	273

chronic cases. It was readily determined that there was a direct relationship between the dosage and the intensity and frequency of side effects. Side effects increased proportionately with age, and many were noted, particularly in patients 60 years of

age and over. In the younger group relatively few side effects were noted. Except for dizziness, side effects were almost infrequent in dosages of 75 mgs. and under, and more frequent in dosages between 75 to 200 mgs. Most of the side effects were more annoying than dangerous and consisted of dryness of the mouth, perspiration, tremors, especially of the upper extremities, dizziness and occasional blurred vision, and in some patients some tendency to gastrointestinal disturbances. Some patients complained of marked constipation, but in the author's experiences this was not as prominent a symptom as reported by other investigators. Increased agitation occurred in a small number of patients. Because of this, certain of the treatment schedules included the use of both tranquilizers, such as Thorazine, and stimulants such as Ritalin. With the combination of such drugs it is, of course, much more difficult to evaluate the role of Tofranil. There did not appear to be any particular tendency toward hypotensive attacks with this drug, in spite of the complaints of dizziness which apparently are due to other causes as is vertigo. One serious side effect which has not been reported in the literature is the factor of sudden falls which occur apparently only in treated patients who are 60 or over. These are of a peculiar type in that the patient falls without any prior warning or previous episode of dizziness or vertigo. Because of this he may fall

suddenly as a dead weight with possible consequent injuries. Such falls occurred only in patients who were receiving Tofranil in doses in excess of 75 mgs. per day, and were entirely abolished in dosages below this level. A further peculiarity is that the patients are amazed to find themselves suddenly falling. There is no loss of consciousness nor do the falls appear to be due to hypotensive episodes as no particular alteration in blood pressure can be seen in such individuals. Experimentally, it has been reported that Tofranil may upset the carotid sinus mechanism in animals, and this may perhaps offer an explanation for such falls. It can be seen from Table 3 that dizziness and tremors consti-

cause states of euphoria which may reverse the depressive states into manic excitements. There is a greater tendency to a more normal type of feeling so that the patient does not feel stimulated or over-active. This is an important differential since it permits a patient to act with good judgment and to partake of social activities in an acceptable manner.

CLINICAL RESULTS

All research workers who used this drug initially were unanimous in the conclusion that, unlike many other psychopharmacological agents, it specifically affects depressive conditions and has very little effect on paranoid states or disturbed behavior, particularly in schizophrenics. This initial impression is rather intriguing and a unique finding, and should be investigated more widely for a longer period of time. Since depressive states frequently have a natural tendency towards recovery, it is much more difficult to evaluate the results produced by Tofranil as compared to the results noted in the use of phenothiazines in schizophrenics and allied conditions. It would, however, appear that proportionately a larger number of patients are improved clinically than could be anticipated without the drug and that such improvement occurs more rapidly. The specificity of the effect can also be demonstrated in that in early cases the patient will quickly relapse if the drug is removed since there is very little storage of this drug in the body beyond 24 hours. Its effect is much less spectacular than the results produced by ECT, but is much more acceptable to most patients. It would appear evident that the greatest value of the drug is in conditions of pure retarded depression which are unassociated with somatic complaints, agitation or paranoid tendencies. The greater frequency or intensity of such symptoms accompanying the depression will, as a rule, lessen the therapeutic benefits of Tofranil. However, it seems to be almost impossible to point with any degree of consistency to certain target symptoms which are affected most promptly and effectively by this medication. Endogenous depressions appear to do well and a number of agitated depressions respond quite well. However,

TABLE 3

<i>Side Effects</i>	<i>Total</i>	<i>Required Discontinuation</i>
Agitation	7	
Hypomanic	0	
Seizures in Epileptics	0	
Parkinsonism	0	
Dystonia	1	
Syncope	5	
Hypotension	1	
Palpitation	2	
Cardiovascular	0	
Tremor	28	1
Diplopia	7	
Perspiration	16	
Dry Mucous Membranes	19	
Jaundice	0	
Photosensitization	0	
Dermatologic	2	
Constipation	0	
Excessive Weight Gain	0	
Urinary Frequency	0	
Nausea	5	
Dizziness	22	1
Falls	17	3
Insomnia	2	
Total patients with side effects—67		

tuted the largest number of side effects. These, however, are seldom of sufficient severity to require discontinuing the medication since lowering the dosage, as a rule, will abolish these symptoms. The literature contains two reports of the occurrence of jaundice with the use of Tofranil. So far no cases of agranulocytosis has been reported. Unlike Marsilid, Tofranil does not

in some it often is necessary to use certain other drugs such as Thorazine or Ritalin. Tofranil appears to remove the depressive elements and to free anxiety which requires control by tranquilizers. These are best given at night in a single dose, to promote sleep and to avoid lethargy or drowsiness during the daytime. When the drug is effective, results may be seen as early as the first or second day and usually within a week. Occasionally little effect will be noted for 2 or 3 weeks. One articulate, intelligent patient who had had much experience with the effects of other drugs stated in speaking of Tofranil that its effect is "sneaky; without realizing it you suddenly find yourself doing and enjoying things which you were too tired to do the day before." There is no dramatic change but many of the patients state that they feel normal or that they feel good. There appears to be a general release of the depressive attitudes even though at the same time some patients may continue to talk of various feelings of guilt or sinfulness. In this connection the drug may relax the patient sufficiently so that they are more responsive and available for concomitant psychotherapy. They gradually become more remote or detached from their thought content with subsequent improvement in affect. The drug was used in association with ECT without any particular increase in side effects or complications. It appeared to be also effective in recurrent depression which previously had been treated by electroshock. It was found that the use of Tofranil in such cases diminished the frequency of relapses.

The drug was also used on 60 schizophrenics, many of whom had depressions associated with paranoid ideas. Others were catatonics or withdrawn or mute. It was quickly evident that Tofranil was not of great value in schizophrenics and in fact in many cases was contraindicated because at least half of them became worse. It would appear that a compensated paranoid schizophrenic who is given this drug may be relieved of depression or anxiety, but the paranoid elements become exaggerated. Such patients became much more disturbed, suspicious, hostile and aggressive.

An example of this reaction was a male patient who prior to treatment had been somewhat surly and inappropriate, hostile, suspicious, occasionally defiant, but on the whole able to control his symptoms and in general quite cooperative. He received 100 mgm. of Tofranil and within a week became restless, agitated, sullen, argumentative, combative and unable to control the symptoms or the emotional state which previously was held under some degree of control.

A number of depressions in arteriosclerotics and seniles were treated with rather impressive results. In about 50% to 65% of the patients the depression cleared or became ameliorated. The organic symptoms of confusion and disorientation, of course were not affected. It must be realized, however, that there are many patients in the older age group who develop depression without precipitating organic etiology. This type appears to respond quite well to the use of this drug.

It must again be emphasized that in the older person the drug should not be used in large doses, an effective dose usually varying between 25 and 75 mgm.

The results of treatment are briefly summarized in Tables 4-7. On the reception service most of the patients treated were either readmissions or acute admissions and most of them were suffering from an involutional psychosis, a manic-depressive depression or an acute psychoneurosis. There were also a few depressions associated with psychosis with cerebral arteriosclerosis.

TABLE 4
DEPRESSIONS,
FEMALE RECEPTION SERVICE
(ALL TREATED PATIENTS)

Recovered	0
Much Improved	30%
Improved	56%
Unimproved	14%
Worse	0

TABLE 5
SCHIZOPHRENIAS

Recovered	0
Much Improved	14%
Improved	24%
Unimproved	38%
Worse	24%

TABLE 6
DEPRESSION IN 57 CASES OF
CAS—SENILE OR ORGANIC

Recovered	0
Much Improved	28%
Improved	40%
Unimproved	20%
Worse	12%

A group of seniles or arteriosclerotic patients were selected from a chronic area for treatment for a single symptom which they commonly displayed, namely depression. For the 57 in this group, the results are shown in Table 6.

It is, of course realized that the results quoted in this group are based upon the improvement in only one symptom, namely depression.

These tables vividly display the specificity of this drug in treatment and indicate why it has been labelled by many research workers as an anti-depressive drug which produces promptly or gradually a change in the depressive state. Some patients fail to respond to treatment and show no improvement in their depression and it seems impossible to determine the difference among patients since they apparently display the same type of symptom. No study was made of the environmental situations or previous personality patterns. Table 7 includes a number of private patients seen in office practice by some of the psychiatrists participating in this study.

There are sufficient indications, however, that Tofranil is a useful drug and that

somewhere between 50% and 70% of patients displaying depressive symptoms will improve. Where no improvement occurred, a tranquilizer, usually chlorpromazine, and a stimulant, usually Ritalin, were added to the treatment schedule. This combined form of treatment resulted in 10% higher improvement rate than when Tofranil was used alone. When the depression failed to clear adequately or to sufficient degree, an occasional electric shock was given in conjunction with the use of Tofranil. Indications are that the addition of Tofranil to such therapy will reduce the relapse rate and permit a more stable course. The use of this drug has reduced the need for ECT to almost the vanishing point, except for an occasional concurrent shock treatment.

Of the patients treated who are now out of the hospital, (approximately 50) the vast majority of pure depressive states were released from the hospital within one or two months. It is interesting to note that some of these include patients who failed to respond to electric shock previously or whose improvement lasted for only a short period of time.

SUMMARY

1. Preliminary observation would indicate that Tofranil is a useful drug in the treatment of depressive states. It is not a tranquilizer and, therefore, is of little value in other conditions. It is a promising drug which can be used as an anti-depressant. However, its indication and scope must be studied for a longer period to determine what symptoms respond best to it.

TABLE 7
RESULTS OF TOFRANIL THERAPY IN 273 ACUTE AND CHRONIC PATIENTS

Diagnosis	Much Improved	Improved	Unimproved or worse
All treated patients	56%	16%	28%
Involuntal Depression	58%	16%	26%
(a) Without Agitation	58%	17%	25%
(b) With Agitation	60%	13%	27%
(c) Combined with Chlorpromazine	63%	18%	19%
(d) Combined with Chlorpromazine and Ritalin	69%	8%	23%
Manic-Depressive	70%	13%	17%
Reactive Depression	72%	7%	21%
Organic and Senile Depression	56%	14%	30%
Psychoneurotic Depression	59%	14%	27%
Schizophrenia	14%	24%	62%

2. The effect of Tofrānil in many patients can be increased by the concomitant use of a tranquilizer or a stimulant. In a number of patients Tofrānil, by removing the depressive elements, frees and exaggerates anxiety.

3. It can be used in combination with electric shock or after electric shock as a maintenance dose.

4. It is of little value in the treatment of schizophrenics and in paranoid types may often aggravate the condition and break down an unstable equilibrium to which the patient has become adjusted.

5. The combined use of Tofrānil and a tranquilizer is helpful in certain psychoneurotic states, associated with anxiety or with reactive depressions.

6. It is of value in the treatment of depressions occurring in the older age group.

7. High doses are unnecessary and the effective range is somewhere between 75 and 150 mgm. per day.

8. For the most part, side effects are minimal, particularly in the younger age group. As one approaches the older age group, the frequency of such side effects increases, but usually they are more uncomfortable than serious. In patients over 60 there may be a tendency to sudden falls which occur without warning. It is recommended that in older patients the dosage be limited to 75 mgm. or less.

9. Side effects can usually be reduced in frequency or intensity by a reduction in the dosage.

10. Long-term use of the drug is apparently necessary as patients may relapse, at least in the early stages when the drug is prematurely removed. Since the drug is rapidly excreted, it is necessary to give the medication 3 times a day.

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EFFECT OF TRIFLUOPERAZINE ON AUDITORY / HALLUCINATIONS IN SCHIZOPHRENICS

WALTER KRUSE, M.D.¹

Five years' experience with neuroleptic therapy has convinced us beyond any reasonable doubt that these drugs are effective. Yet, their mode of action is still essentially unknown. We believe that one way to a better understanding of the therapeutic process in modern drug treatment is the detailed study of psychopathological observations made in patients that receive the new medications. Trifluoperazine,² in our experience, has been the most powerful drug available for treatment of chronic and acute schizophrenics. For this reason it appeared to be particularly suitable for the present study.

Before we report our findings an attempt will be made to summarize what is known about the effect of the various somatic therapies on auditory hallucinations. The scarcity of such reports is indeed deplorable.

Dussik(1) found in insulin-treated patients that the auditory hallucinations would first become softer and more distant, then less obtrusive and less important, and finally they would disappear altogether. In his discussion of insulin-treated patients, Kalinowsky(2) states:

Delusions and hallucinations are usually the first to yield. It is important to note that improvement appears first in a reduction of the emotional charge behind the delusions and hallucinations: their dominance or obsessiveness is diminished. With the reduction of the emotional charge, the feeling of reality of the delusions and hallucinations is reduced. Many patients report that the hallucinations become fainter, the voices are less insistent or sound further away and indistinct.

In regard to psychosurgery, the statements found in the literature are rather conflicting. Stengel(3) reported that hallucinations were unchanged in 117 out of 154 cases. On the other hand, Freeman and Watts(4) found that the hallucinations

disappeared in 18 out of 19 cases. Kalinowsky(2) summarizes his own experiences as follows:

We have seen that during the immediate post-operative period, delusions and hallucinations disappear temporarily with more extensive operations such as standard lobotomies, and for an even shorter time or not at all after such relatively minor procedures as topectomy. When they presently reappear, however, they usually do not regain their earlier importance to the patient. He hardly talks about them spontaneously, and does not act on them. He loses interest in them progressively, and after several years they may disappear for good.

Kielholz(5) in his report on treatment with chlorpromazine, histamine and insulin, found that gradually the hallucinatory experiences disappeared from the foreground and could be influenced by reasoning with the patient. Sometimes the hallucinations stopped rather abruptly.

Feldman(6) studied a group of 119 patients treated with chlorpromazine and found 30.5% markedly improved, 27.5% moderately improved, and 21% slightly improved. Unfortunately, no information is given about the kind of improvement and the criteria for classifying a case into one of the 3 categories. In a subsequent study on trifluoperazine, Feldman(7) found "significant improvement" in 75% of his patients compared with 58% in chlorpromazine treatment.

Our study is based on 60 female schizophrenics in whom auditory hallucinations was a conspicuous symptom. They were treated with an average dosage of 40 mg. of trifluoperazine. The usual starting dose was 15 mg. daily, given orally in divided doses: the dosage was gradually increased according to the response noted. The lowest dosage given was 20 mg. daily; the highest, 80 mg. For the purpose of evaluating the effect of trifluoperazine we used the 4 main characteristics of hallucinations mentioned by E. Bleuler(8): intensity, distinctness, projection, and reality value. We added a fifth criterion: frequency of the hallucina-

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² Trifluoperazine was provided for this study as "Stelazine" by Smith, Kline and French Laboratories.

tory experiences. Duration of this study was 3 months. Patients were interviewed by the author in an informal way once or twice weekly during this time. Leading questions were carefully avoided. Frequently the patients would mention spontaneously the changes that they had noticed.

At the end of 3 months the auditory hallucinations had stopped completely in 39 out of 60 cases. In addition, improvement was noted in the attitudes and behavior of most of the patients. They became more friendly and cooperative and showed renewed interest in ward activities. Table 1 shows the changes observed in the patients' hallucinations.

DISCUSSION

Frequency was the first criterion that responded to treatment, and a reduction of frequency occurred in all patients. In 12 cases the change was noticeable within 24 hours of the start of treatment, and the end result was practically reached within the first 3 weeks. The 39 cases that showed complete arrest of auditory hallucinations did so before the fourth week of treatment, and about one third of them had been subject to very frequent hallucinations almost continuously for several months or even years. At the termination of the study 17 patients experienced their hallucinations only before going to sleep.

Intensity: Here again we saw a rapid decrease within the first week, and only 8 patients reported any changes after the first month. It seemed impractical to differentiate between moderately and greatly

diminished intensity. Voices that had not been overly loud were reduced to a whisper, very loud voices were reduced to a normal conversational tone and finally to a barely audible whisper.

Distinctness: The change occurred here somewhat later than in the previous two categories, but only 18 patients reported any change after the first month. In a typical case of the "moderately diminished" group the patient reported that the voices had become somewhat vague and unclear; only part of the words could be understood, but the general meaning was still clear. Three patients no longer referred to their "voices" but described their experiences as "vivid thoughts" or just "thoughts." One patient finally perceived only a confused incomprehensible murmur. These 4 cases were classified as "greatly diminished distinctness" since the distinctness of their hallucinations had previously been very high. Of the 39 patients who no longer had any auditory hallucinations, 21 had previously been subject to very distinct hallucinatory experiences.

Reality Value: Before treatment, 20 patients had occasionally expressed doubt about the reality of their hallucinations, and 40 were fully convinced that they were real. All of the former showed complete arrest of hallucinations at the end of the study. Of the latter, only 3 patients remained fully convinced of the reality, 5 expressed doubt, 13 conceded that they were probably not real and called their experiences "imaginings," and 19 were no longer hallucinated.

Projection: In 4 of the patients who

TABLE 1
EFFECT OF TRIFLUOPERAZINE ON AUDITORY HALLUCINATIONS

	Halluc. stopped	Greatly diminished	Moderately diminished	Not diminished	Increased
Frequency	39	17	4	0	0
Intensity	39	19		2	0
Distinctness	39	4	7	10	0
Reality Value	39	13	5	3	0
	Halluc. stopped	Change from within to without	Change from without to within	Other changes	No change
Projection	39	1	2	6	12

were completely relieved from auditory hallucinations, we saw a change from without to within (usually inside the head or ear) before the hallucinations were finally arrested. Thirty-five patients did not notice or report any change of projection before total stop. Two reported a change from without to within but continued to be hallucinated at the end of the study.

One patient who had formerly localized the voice within her stomach told us 3 weeks after being placed on trifluoperazine that the voice was now coming out of the wall where she thought a radio-telephone was hidden. Six patients showed other changes: two who had been subject to very unpleasant and disturbing auditory hallucinations which they thought originated only a few inches away from their ears reported now that the voices came out of the next room, or the room above. Four patients who continued to hear voices throughout the study, told us that the voices were now coming from a very great distance; they were unable to say from which direction, but the voices were fairly loud and very clear.

According to Gruhle(9), a patient who localizes the voice in his head commits an act of judgment rather than experiencing an immediate topical perception. In our study no patient had localized the voice in her head before treatment, and only 6 did so during the course of trifluoperazine therapy, in spite of the fact that the great majority of our patients developed good insight and judgment during treatment.

E. Bleuler's statement(8) that the 4 main characteristics of hallucinations are entirely independent of each other was confirmed by our observations. Some patients had infrequent, barely audible and very indistinct hallucinations that were characterized by high reality value. There were very intense and distinct hallucinations with little or no reality value, and there were intense but indistinct hallucinations. While trifluoperazine did affect all of these characteristics in the overwhelming majority of our patients, the various characteristics were affected not always at the same time or to the same degree. Distinctness and projection appeared to be

the characteristics that were less frequently influenced than the others.

In comparing our results with those obtained in insulin coma therapy, we find many similarities. Surprising, however, is the lack of uniformity in response, and the large number of rather abrupt arrests of hallucinations without the easier to understand step-by-step reduction usually seen in insulin patients.

In an earlier paper(10) we referred to the significance of the extrapyramidal syndrome in neuroleptic therapy. Although these extrapyramidal symptoms frequently accompany therapy with trifluoperazine, they respond well to antiparkinsonian agents and do not prevent a favorable therapeutic response. At first glance, it seems unlikely that trifluoperazine's marked effect on auditory hallucinations is in any way related to its very pronounced effect on the extrapyramidal system. But at least one possible connection might be considered. Hallucinations are "false sense perceptions" and they do have certain qualities in common with real sense perceptions. Schilder's experiments(11) have shown us that they react, for example, to vestibular irritation in a way similar to perceptions. A few years ago, Jacob(12) published a monograph on altered perception in extrapyramidal disorders. He found frequent and typical disturbances of perception in his patients, and this is not at all surprising if one remembers (as the Gestalt psychologists have stressed again and again) that the perceptive process is a continuous interplay between motor and sensory factors.

Movement and perception cannot be separated. Movement is a necessary condition for perception. It is conceivable that trifluoperazine's striking effect on auditory hallucinations has something to do with the motor component of the disturbed perceptive process in these patients.

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CURRENT PROBLEMS IN DYNAMIC PSYCHOTHERAPY IN ITS RELATIONSHIP TO PSYCHOANALYSIS¹

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The current trend toward applying psychodynamic reasoning to psychotherapy which in certain respects differs from the standardized form of psychoanalytic treatment is one of the most significant developments in psychiatry. Freud foresaw this development in his often quoted statement in which he compared psychoanalysis with gold and other psychotherapeutic procedures with its alloys. This unmistakably implies a value judgment, and permits certain reflections concerning the underlying reasoning. It obviously stems from Freud's conviction that the aims of psychoanalytic treatment and research run parallel. Psychoanalysis aims at the genetic understanding of the patient's complaints. According to Freud, insight into these origins is the primary therapeutic agent. Etiological research and psychoanalysis accordingly have the same objective: to understand the origins of a disease. Referring to psychotherapy, Freud obviously meant that the latter was not an attempt to penetrate into the early determinants of the patient's current complaints. It tries to alleviate them with procedures which are not etiologically oriented, at least not to the same degree as classical analysis. In it the pure gold of etiological understanding is mixed with less valuable practical objectives.

There is growing doubt among many experienced analysts concerning such a complete parallelism between the aims of genetic research and psychoanalytic therapy. Freud's parallelity statement is only approximately true. It was, however, a most fortunate position at the time when Freud pronounced it. It was a logical outcome of his conviction that in order to cure a disease one must understand its causes. Therefore, his first interest was in understanding the nature and the origins

of neurotic illness. This was the first indispensable step towards attempting to cure it. To this basic conviction of Freud we owe the development of his personality theory, of psychodynamics as a basic science of psychiatry and of all disciplines which are concerned with man as a social being. It replaced the hit and miss type of psychotherapy, which lacked any sound theoretical foundation and an etiologically oriented treatment.

It was indeed fortunate that for a long time the theoretical interest in etiology outweighed therapeutic ambitions. Freud, according to his own testimony, never was a therapeutic enthusiast. His overwhelming curiosity to understand the genetic background of his patient's problems is clearly reflected in his earliest technical recommendations, which stressed the significance of insight.

The first serious challenge to the thesis that the patient's own genetic understanding of his neurosis is the primary therapeutic factor occurred when the transference phenomenon was discovered. Freud then proclaimed that the patient, in order to be cured must not only understand his neurotic past, but re-experience it in relation to the therapist. Emotional re-living of the past, in addition to insight, now took an important place in the theory of the therapeutic process.

The relation of the emotional re-living of the past to intellectual insight is still an open question. Freud never changed his view that remembering of repressed traumatic situations is the ultimate goal. Only remembering those early events in which the neurotic patterns originated enables the patient to terminate their compulsive repetition in the transference and in his life. Ferenczi and Rank challenged this theory and maintained that re-experiencing during treatment of previous dynamic patterns alone without remembering the original events in which they originated, permits the patient to recognize their past determined nature and exchange them

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with attitudes appropriate to the present. This view was rejected by most analysts as well as by Freud, although it was never subjected to a detached empirical evaluation. This emphasis on emotional experience by no means questioned the postulate that the therapist must understand the genetic background at least intuitively, but preferably consciously, in order to conduct the treatment effectively.

In a series of writings I revived this old unsettled issue by pointing out that the repeating of the old interpersonal reaction patterns during treatment constitutes a corrective experience, because they are repeated towards the therapist who does not behave in the same way as those original objects behaved towards whom the patient's original pattern were directed (1, 2, 3, 4). I emphasized, as did other psychoanalysts, that neurotic reactions do not develop in a vacuum, but are the child's unsuccessful adaptive reactions to environmental influences. The repetition of old patterns in a new setting, to which they do not fit, serves as a challenge to the patient's ego for readjustment, to exchange old patterns with new appropriate ones. One of the ego's basic functions is the constant readjustment of behavior to the everchanging external and internal situations. The neurotic ego lost this flexibility and remains fixated or easily reverts to old modes of feeling, thinking and acting. The transference situation is a unique experience, inasmuch as the therapist's behavior is different from that of the original significant persons in the patient's past life, but it also differs from the behavior of other persons who react to the patient's fixed behavior patterns and mostly reinforce them. The therapist's un-involvement mobilizes the ego's basic function to attempt a new appropriate adjustment.

It is obvious that from this perspective the cognitive act, namely the intellectual recognition of the difference between past and present is secondary to the actual experiencing this difference in interacting with the therapist. In this view the emphasis shifts from insight to experience, although the role of insight as a secondary but often powerful consolidating factor is by no means denied. This emphasis on

emotional experience has been earlier made by others, particularly Aichorn in his treatment of delinquent youth. The therapist's permissive, yet uninvolved, behavior is perceived by the patient as a quite novel experience, and induces him to change his own responses. The old controversy between Plato's and Aristotle's learning theory—learning through logical insight versus learning through practice—is revived in this current argument. It appears to me that we deal here not with a question to which the answer is either/or. Both principles—experience and insight—are operative in every form of learning, also in the specific form of re-education we call psychoanalysis, and, if I may add, also in dynamic psychotherapy. If some analysts choose to call this new emphasis on emotional experience a dilution of the true concepts of the classical theory, I can only answer them that the phenomena in nature seldom can be understood from one single principle. Even the phenomenon of radiation could not be adequately described by the undulatory theory alone and required the revival of the older corpuscular theory. Certain aspects of radiation require the undulatory, other aspects of it the corpuscular theory. The emphasis on the emotional events during treatment may dilute the purity of the single-minded emphasis on insight, but only the two together do adequately describe the actual therapeutic process.

Here is the point where the aims of etiological research and treatment begin to diverge. As long as insight into the origins of the disease were considered as the principle therapeutic factor, the aim of genetic research and psychoanalytic treatment indeed coincided. The stress on emotional experience alters the absolute validity of this contention. It is quite possible that by focussing attention upon the emotional interaction between therapist and patient, the cognitive reconstruction of past events will lose its primary significance, although I believe that in many treatments this will always remain a potent factor. At present it would appear to me that intellectual insight mostly follows rather than precedes corrective emotional experiences. It is made possible by the latter. Bluntly stated, profound therapeutic results may

arise from merely corrective experiences even if they are not followed by the revival of repressed memories. Cognitive reconstructions alone never have penetrating therapeutic effect. The appearance of repressed memories is the sign rather than the cause of an emotional change which has already taken place.

This is the crucial point where dynamic psychotherapy and classical psychoanalysis merge. The creation of an appropriate interpersonal climate which fosters that type of emotional experiences which induce the ego to replace old patterns with new ones is the predominant factor in all dynamic psychotherapies, including psychoanalysis. Our current studies in the Mt. Sinai Hospital, in which we observe the therapeutic interaction between therapist and patient, both in psychoanalysis and psychotherapy, convinced our research team that the cognitive and emotional events can only be artificially separated. Moreover, it is becoming clear to us that the influence of the individuality of the therapist is a crucial, although yet almost completely unexplored, factor.

According to the blank screen model of the classical theory, the analyst functions incognito as a neutral intellect who masters the psychoanalytic theory. This concept is being amended by growing consideration paid to the analyst's countertransference reactions as a significant factor in the therapeutic process. A further crucial question is how much, apart from his specific countertransference reactions, the therapist as a distinct individual enters into the therapeutic process. Or, in other words, would the course of the treatment be the same if the patient were treated by a different analyst with the same theoretical orientation and practical experience, but having a different personality—for example, had the patient been treated by a woman instead of by a man, by a younger man instead of an older man, by a reserved rather than an outgoing personality. How are the specific personality features of the therapist, including his own value systems, perceived by the patient even if the analyst tries to keep his incognito, and how does all this influence, if at all, the transference and the whole course of the treatment?

These and many other vital questions are today unanswered. What seems to be certain is that the patient does not perceive the analyst only as an abstract intellect, but as a distinct person. This fact must be included in an adequate theory of the therapeutic process.

It also appears to be certain that the emotional and the cognitive factors are organically connected. This fundamental fact makes the efforts to divide psychotherapeutic procedures, including psychoanalysis, into rigid categories, both artificial and futile. Knight lucidly expressed this view in 1949 in emphasizing that fundamentally there is only one psychotherapy which "must rest on a basic science of dynamic psychotherapy" (5). The patient's condition and the spontaneous course of the therapeutic process, and not our own preconceived artificial categories, prescribe our activities and interventions. Even emotional support alone may introduce spontaneous insight by decreasing anxiety which interferes with insight. In fact, I suspect that the supportive effect of the psychoanalytic process has been not sufficiently recognized as one of the main factors favoring both insight and the emergence of new emotional patterns. Quite rapid puzzling transference cures may find their explanation precisely in this circumstance: the emotional support which the patient derives from the treatment situation may restore the ego's temporarily impaired integrative capacity, and thus introduce a spontaneous healing process.

This view, if it is valid, unavoidably must have an effect upon our training practices. Knight's tersely stated principle did not yet affect our educational policies sufficiently. Psychoanalysis and dynamic psychotherapy can only be taught and practiced together as one comprehensive field. To implement this principle is extremely difficult at present because of our traditional customs and status considerations, and above all because of the current trend in all aspects of our civilization towards organization and standardization.

Our field is too young to be allowed to be frozen prematurely by this organizational fervor, which demands clear cut,

standardized, but often quite artificial, professional categories. In spite of this, because of its practical effectiveness and theoretical soundness, dynamic psychotherapy is in the process of introducing a new fresh point of view in psychiatry, which is not weighted down by a heavy load of traditional beliefs and practices. Gradually it will transform not only the education of psychiatrists, but psychoanalytical training itself.

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SENSORY DEPRIVATION AND SCHIZOPHRENIA: SOME CLINICAL AND THEORETICAL SIMILARITIES¹

NORMAN ROSENZWEIG, M.D.²

During the recent past, the effects of sensory deprivation have been extensively reported in the literature. The effects of sensory deprivation have been reported in the human, animal, and plant kingdoms. The effects of sensory deprivation have been reported in the human, animal, and plant kingdoms. The effects of sensory deprivation have been reported in the human, animal, and plant kingdoms. The effects of sensory deprivation have been reported in the human, animal, and plant kingdoms.

It is not the purpose of this paper to discuss the mechanisms responsible for these effects. However, these effects have been reported in the human, animal, and plant kingdoms. The effects of sensory deprivation have been reported in the human, animal, and plant kingdoms. The effects of sensory deprivation have been reported in the human, animal, and plant kingdoms. The effects of sensory deprivation have been reported in the human, animal, and plant kingdoms.

I should like to present a brief reconstruction of the sensory deprivation question. It was prompted by certain clinical observations. It derives, as the title of this paper indicates, from the resemblance in clinical picture between the effects of sensory deprivation and the schizophrenic syndrome.

First allow me to tell you about two types of case which have come to my attention. The first is of a kind that we saw not too infrequently in the Air Force. A young Air Policeman was sent on guard duty alone, at night, on an isolated post.

The young man, often not too bright but otherwise without prior difficulties, would become apprehensive, because he would hear voices in the darkness around him, and become progressively, usually, more paranoid. He would be found the next morning in a withdrawn, perplexed state, and brought in for psychiatric examination. Characteristically we would find a schizophrenic picture with confusion in thinking, affective instability, suggestibility, and other features. He would have delusions and paranoid ideas. Usually the clinical picture cleared up within a few days, without apparent sequelae. I have been told that because of such difficulties, airmen are no longer sent out alone on solitary guard duty.)

The other type of case is illustrated by a 38-year-old woman with retinal detachment being prepared for surgery, on whom psychiatric consultation was requested because of the development of the delusion that her medication was poisoned. She was married, described as "high-strung," but otherwise without prior psychiatric difficulty. Family history was also completely negative for mental illness.

When seen she was one of 5 patients remaining on a ward that had been largely evacuated for redecorating. The patient's bed was some distance from the other remaining patients, and was surrounded by screens. Both eyes were covered with bandages. She was noted to be quite restless, her hands and face in constant movement. Her thought processes were confused and rambling. Her voice was whining and childish. She complained that her medication was poisoned, and that she was being smothered. She told of seeing a "funny little man" like a cartoon, and said she was unable to tell whether she had been dreaming or awake at the time.

The patient was operated the following day, after which only one eye was bandaged and she was brought into closer contact with other patients and staff. The psychotic aspects cleared almost at once and the patient was discharged a week

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easy, free from mental abnormality. Examples are of course not unique. If psychiatrists have seen similar cases have read about them. They are of great interest, however, because both these conditions involve the development of a psychotic, schizophrenic-like condition when the subject is in the conditions of a restricted sensory environment.

It will be recalled that long before work began on experimental sensory isolation there were many reports of such experiences. Hallucinatory experiences were reported by explorers(14), but even more interesting are the more complete reports of such men as Admiral Byrd and Bombard(3). Byrd spent 6 months in the Antarctic; Bombard crossed the Atlantic alone on a raft. Yet the experience of both was remarkably similar. Both drew "deeply into themselves for emotional sustenance." Both had difficulty maintaining organized thought, and in maintaining control over himself and his environment; and each developed compulsive-type defenses such as structuring the daily routine, adherence to a strict schedule, doing mathematical problems, etc. Both experienced difficulty in testing reality, and doubted the validity of their own thought. Both tried to force their thinking toward pleasant associations from the past and away from the anxiety-producing aspects of their current situation, in order to ward off depression.

General Dean(4), a prisoner of the Chinese Communists, had almost identical experiences. He became depressed, even attempted suicide in his isolation. He, too, tried to maintain control over his own thinking by using compulsive defenses such as doing algebraic problems in his head, and calisthenics (even when this was reduced to crossing and uncrossing his fingers). He, too, doubted the validity of his own thoughts, and had difficulty in testing reality. He could not maintain organized thought, and drew into himself.

Other such prisoners had similar problems. There was inability to demarcate truth and fiction, to determine the validity of experience. Impairment of organized thinking, mental dullness, depression, and

other psychotic symptoms, including hallucinations(14). When Heston and his co-workers in Hebb's laboratory at McGill set up the sensory deprivation capsule, they found that the subject, in experiencing "brainwashing" in early phases of the experiment, had only minor and temporary effects on perception and thought, but that as time went on, the subject began to show more serious, well-rounded psychotic symptoms(15).

Nearly all subjects reported that the most striking thing about their experience was that they were unable to think clearly about anything far and for the future, and that their thought processes seemed to be affected in other ways(16). They were unable to concentrate, and showed impairment on tests of mental performance. Their inability to maintain organized and directed thought activity was accentuated by changes in thought content in the form of autistic fantasy. Ingressive behavior was also seen with Penikese prisoners. Inability to handle affective reactions, reality testing was impaired, and distortions of body image and hallucinations were reported(8, 2).

Felt(1) describes regression from secondary to primary process thought activity. There was a loss of directed thought and a shift to autistic, highly personal and emotionally "charged" reveries and fantasies, sometimes followed by projection of visual imagery(9).

Selmon and his co-workers at Harvard, using the tank type respirator, have found disturbances of abstract thinking, regressive behavior, autistic fantasy and impairment of reality testing. They, too, have seen bizarre disorganization with delusions and hallucinations(11, 10).

Freedman, Grunebaum and Greenblatt report difficulty in thinking coherently and in concentration, changes in body image, visual and auditory illusions and hallucinations, and unreal or paranoid fears, all within a framework of autistic withdrawal(5).

Goldberger and Holt report both Rorschach and behavioral phenomena indicative of regression from secondary to primary process activity. Their subjects demonstrated decreased efficiency and continu-

ity of thought severe affective disturbances, increase in vividness and frequency of imagery, disturbances in time sense, depersonalization, and body image disturbances (6, 7).

One cannot help noting that throughout these reports—clinical, autobiographical, experimental—there appear again and again Bleuler's cardinal symptoms of schizophrenia: disturbance of associations, disharmony of affect, autism, ambivalence. We see disruption of secondary thought processes, regression to the primary process, impairment of reality testing, and in addition, such accessory symptoms as distortion of body image, depersonalization, delusions, hallucinations. As a model psychosis, the sensory deprivation experiment much more closely resembles schizophrenia than do the experiments with LSD or mescaline.

It seemed quite logical therefore, to attempt an interpretation of the sensory deprivation effects within the framework of a theoretical model which we had developed from a consideration of schizophrenia (12). This model, which attempts to correlate psychological and physiological findings, is described more fully elsewhere (13, 12), and cannot be detailed here. A brief outline, however, may serve to sketch in a few of the pertinent concepts.

The theory holds that normal mental activity is dependent upon the appropriate interaction of two functional systems. The more primitive *affect system*, functionally reminiscent of Freud's primary process, is represented anatomically in the rhinencephalon and the subcortical structures with which it connects. This system receives messages relative to ongoing bodily processes. A homeostatic shift will cause the affect system to scan the perceptual stream for those cues which have come to be associated with return of equilibrium. The significance of a percept is thus determined by the relationship of its representation to the internal state, i.e. to potential gratification or potential danger. The conscious counterpart of this relationship is the affect. While the affect system serves the vital function of establishing the relevance of experience for life, it is limited to qualitative discriminations and is autistic in orientation.

The phylogenetically more recent *abstract system* is represented in the neocortex, and is roughly analogous to Freud's secondary process. It is this system which receives and correlates stimuli from the various sense modalities, and by means of such consensual validation of experience serves to test reality. By elaborating and abstracting perceptual data, it functions normally to define experience sharply, makes available to the affect system a broader base for decision making, and enables the organism to meet the demands made upon it by the environment.

Ordinarily, the sensory input, after initial correlation and elaboration by the abstract system, is communicated to the affect system, which seeks to establish the relevance thereof for current and prior needs and for ongoing processes. This information is then fed back to the abstract system, where it serves as the basis for further elaboration, and so on. This back and forth communication between the two systems permits a sequence of meaningful associations which is at once reality oriented and useful in problem solving.

Within this framework, then, we have postulated that the symptoms of schizophrenia result from an internal derangement which interferes with the communication between the systems (12), thereby preventing the reliable determination of the significance of perceptions. This breakdown is seen to result in disruption of the stream of associations and consequent dominance of behavior by the now unchecked and uncorrected autistically oriented affect system, i.e. regression. The critical factor in schizophrenia is thus assumed to be the inability to establish the relevance of sensory experience for ongoing processes.

The situation in sensory deprivation is at once seen to be analogous. Here the interference is external, but the effect is the same. By limitation, depatterning or redundancy the stimuli are deprived of meaningfulness for the subject. When perceived, their relevance for meeting current needs cannot be established; the consequences of this situation are seen in the breakdown of secondary process activity and impairment of reality testing. Our approach suggests that it is the restriction of

meaning rather than the physical limitation of stimuli *per se*, which is primarily responsible for the effects of sensory isolation.

If we are correct, then, the importance of limiting sensory input lies in the limitation of useful information; and even considerable input, if it were deprived of relevance, should lead to a schizophrenic-like state. We suggest that the common denominator in schizophrenia and sensory isolation is *relevance deprivation*, which may be produced artificially by a number of other methods of perceptual manipulation, such as perceptual distortion and sensory overload. These are propositions which are susceptible of experimental investigation; such investigations are currently being developed in our laboratories.

CONCLUSION

It would seem, in fact, that we now have an experimental model of the schizophrenic syndrome superior to the "model psychoses" induced with mescaline or LSD. Not only will perceptual interference reproduce more closely the primary symptoms of schizophrenia, but these disturbances are caused entirely by external manipulation, without the confusion of a toxic psychosis. While of course we cannot assume that approaches such as these will give us valid answers to all our questions, I believe we have here an important instrument to help us bridge the gap between the laboratory and the clinic.

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A STANDARDISED TECHNIQUE FOR MODIFIED ELECTROSHOCK THERAPY USING SUCCINYLCHOLINE CHLORIDE

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INTRODUCTION

In 1941 A. E. Bennett reported on the use of curare as a muscle relaxant capable of preventing fractures and dislocations during convulsion therapy.

More recently other workers, Moss *et al.*, (1953), Impastato and Berg (1956), Jerome Rietman *et al.*, (1956), have described the use of other muscle relaxants and have emphasized the need for an accompanying short-acting anaesthetic (thiopentone). Increasing in popularity is succinylcholine chloride (SCC) which is commonly felt to be the most effective and safest relaxant of those in current use.

The established practice, in this country, is for the SCC to be given with an accompanying anaesthetic, either mixed together in one syringe or separately. Sargent and Slater (1956) state "Scoline (SCC) administration must always be preceded by unconsciousness produced by pentothal, as the feeling of progressive paralysis which would otherwise be felt is terrifying."

It is for this reason that anaesthetics have continued to be used and these authors also make the point "But it is certain that if muscle relaxants came into general use and are handled by psychiatrists unversed in anaesthetic techniques, the death rate from ECT will increase alarmingly." This statement is supported by Maclay's (1953) figures showing that 45% of deaths associated with ECT were in cases when a relaxant was used, although they could only have been a very minor proportion of all cases treated.

The risk of modified treatment must surely be considerably lessened if a simple technique were involved whereby an accompanying anaesthetic is not required. The implication of Maclay's figures may be that thiopentone relaxant technique in the hands of psychiatrists with little knowledge of anaesthetic procedures is dangerous.

We should not be too ready to incriminate the muscle relaxant drugs without sufficient evidence.

A relaxant technique without an anaesthetic means a safer, easier and quicker administration which is probably more effective. There is some evidence that a longer course of treatment is needed when ECT and relaxant and anaesthetic is given than when ECT is not accompanied by an anaesthetic. Several workers have reported on the use of relaxants without anaesthetics. There have been important differences of technique which may possibly have led to some confusion and resulted in no single method being generally adopted. Murray (1953) uses small doses of SCC (20 mg.) and times the shock at 10 seconds after the onset of facial twitching. Impastato and Gabriel (1957) followed Murray's timing technique but realised that the SCC did not develop its full effect when the shock was given. To reduce the severity of the convulsion they used a special machine (Reiter A.C. instrument Model Molac II) giving an initial high voltage shock to produce an amnesia 10 seconds after SCC injection and a further shock 20 seconds later to give a convulsion. Kelleher and Whiteley (1955) used SCC alone, comparing its action with SCC and thiopentone and suxethonium bromide alone. Using SCC alone the shock was timed at 10 seconds after the beginning of facial fasciculation. Mild anxiety in association with facial fasciculation was reported in one third of the patients. Using suxethonium alone they found that more than half of the patients experienced severe anxiety and suggested this was due to the shock-like onset and rapid spread of paralysis that took place with this drug. They concluded that SCC was the drug of choice and quoted Gillies and McNeil (1955)—one patient who recalled on several occasions a sensation of smothering following the injection of suxethonium bromide. Glover and Rosium (1954) using SCC alone required a team of 5 persons to hold the patient, the shock being given after the

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appearance of obvious facial fasciculation or respiratory embarrassment, or both.

The purpose of this article² is to standardise a simple technique for modified ECT using SCC without an anaesthetic, a technique which is safe and without undesirable side effects. This technique has been used by the writer for the past 4 years. No other doctor was required to be present. The experience covers more than 3,000 treatments, both inpatient and outpatient. There were no resultant fatalities.

TECHNIQUE

Method of Administration.—No food or drink is allowed for at least 2½ hours prior to treatment. Thirty minutes before treatment 1/100th gr. of atropine sulphate is injected subcutaneously. In cases of urgency it may be injected intravenously immediately before or with the scoline; but this has not been found quite so effective.

Position of Patient.—The patient lies comfortably on a couch, bed or stretcher on top of which is placed a firm mattress. A pillow is placed under the head. If the mattress tends to sag another pillow is placed under the small of the back but no active attempt at hyperextension of the spine is made. No restraint is used. The patient is merely told that he is going to receive an injection which will relax all his muscles and is reassured that there is nothing to worry about.

Dosage of Succinylcholine chloride.—The dose of SCC to be given is estimated by the weight and muscularity of the patient. This is not the only consideration, however, for muscular response is also dependent on pseudocholine esterase titre. The effect of this is only seen after the first injection, when patients having a low titre may be found to have more complete relaxation and prolonged apnoea than expected in the normal. Slight adjustment in dosage may then be made.

Dosage.—Average dose for men 30 mg., for women 25 mg.; 5 mg. less is given to

those over 60 years old. Where there is a history of chronic chest disease, or if chest deformity is present, dosage is lowered to 20 mg. for men and 15 mg. for women.

These doses have been found sufficient for all routine cases where there is no special indication for modification with muscle relaxants. If however, there is a special risk of fracture or other injury the dose is increased by 5-20 mg. according to the need for more complete relaxation. The second and following doses may be adjusted according to the initial response. In the routine case, partial muscular relaxation is all that is required and where relaxation and/or accompanying apnoea are too severe, the dose is reduced by 5 mg.

Rate of injection of SCC.—A rapid injection is given (2-3 seconds) in order to bring on paralysis as quickly as possible. Slow injections tend to delay the onset of paralysis and increase the likelihood of untoward reactions.

Mouthpiece.—If the patient has teeth a gag is inserted into the mouth immediately following the SCC injection. The patient is asked to bite on it and the jaw is held with moderate firmness. The edentulous patient does not require a gag.

TIMING OF SHOCK TREATMENT

Success in avoiding untoward reactions, the principle one being a sensation of choking, depends on skilful timing. Immediately following the injection the patient is told to raise his other arm to a right angle and keep it there as long as possible. When the arm can no longer be held up and begins to fall to the side, the shock is given. This occurs at a variable time after the injection, usually between 5 and 15 seconds, occasionally being prolonged to 30 seconds. The disagreeable choking sensation appears after the relaxation of the arm and does not therefore trouble the patient. I have questioned many patients following a course of shock treatment using at different times SCC with and without pentothal. The last thing the patient who has SCC without pentothal remembers, is the injection of SCC. He usually believes that it was this injection which put him to sleep.

USE OF OXYGEN AND AIRWAY

During the convulsions an airway is

² I am indebted to Dr. F. H. Hare for his encouragement and advice. I should like to thank Dr. R. K. Freudenberg, Medical Superintendent of Netherne Hospital, Dr. T. P. Rees and Dr. S. A. MacKeith, past and present Medical Superintendents of Warlingham Park Hospital, for giving every facility for the carrying out of this work.

slipped over the gag, the latter being removed. In the edentulous patient the airway is inserted at this point. Oxygen is given by a positive pressure rebreathing bag when the fit shows signs of terminating. However, with such small doses of SCC as described, the patient often resumes spontaneous breathing immediately following or a few seconds after the convulsion without insufflation of the lungs.

When slight anoxia is considered to be dangerous in a particular case, *e.g.*, where heart disease is present, oxygen is administered immediately after the giving of the shock.

RATE OF RECOVERY

This occurs as rapidly as in unmodified shock treatment. This is of particular importance in the outpatient clinic where a speedy recovery without the sleepiness and confusion associated with thiopentone is of considerable advantage. Thus, the patient is allowed to leave the department safely one hour later following a very short period in the recovery room (15-25 minutes). Relatives or friends who accompany the patients are relieved of a tedious wait and are most grateful for this.

COMPLICATIONS OF TREATMENT

The series has been remarkably free from complications and untoward effects. Prolonged apnoea of 3-5 minutes occurred in 3 very old persons. These patients had low tidal volumes and a more prolonged period of apnoea was expected. Manual respiration was found to be more effective than the positive pressure rebreathing bag in aiding resuscitation. One patient developed paroxysmal tachycardia on termination of the fit. This lasted 15 minutes and was brought to an end by carotid sinus pressure.

On two occasions the shock was not given due to a fault in the machine and once the headpiece fell off the table and the movable electrodes which had broken off were not able to be reassembled in time to give the shock. These mishaps resulted in the patients experiencing the disagreeable choking sensation due to SCC. They were however able to continue treatment after reassurance. The latter mishap can-

not now occur as the electrodes are incorporated into the headpiece.

There were no fractures or injuries resulting from treatment.

Lastly, it is important to have an impeccable intravenous technique so that the patient does not become alarmed at the doctor searching and probing for a vein. When complete relaxation is necessary, one must make certain that the total dose of SCC is given into the vein.

DISCUSSION

DIFFERENCES OF TECHNIQUE

1. The essential difference in the technique outlined from those of other writers, Murray(7), Kelleher and Whiteley(9) and Glover and Rosium(11), is in the timing of the shock. The shock is given when the patient's arm begins to fall to the side and not at a time related to the onset of facial twitchings. Kelleher and Whiteley(9), who described mild anxiety in one-third of their patients may have gained this impression from the facial fasciculation and signs of restlessness present. These are not necessarily signs of anxiety.

The retrograde amnesia produced by the shock may account for the lack of complaint of anxiety by some patients, but it is by no means certain that allowing for this these patients have experienced any anxiety.

2. No restraints are used other than the nurse holding the jaw with moderate firmness.

3. Each case must be considered on its own merits when dosage is calculated, *e.g.*, degree of modification required, age, weight and muscularity of patient and the presence of coincident chest or heart disease.

RELAXANT V. RELAXANT AND THIOPENTONE

Fear of the terrifying anxiety said to be produced in the patient following SCC has been the main reason for relaxant techniques unaccompanied by thiopentone not being adopted. Recognised authorities in British psychiatry, *e.g.*, Sargant and Slater (5) have stressed the necessity for an accompanying anaesthetic emphasising the anxiety which would be aroused if this were not given. Experience has now shown

that these fears are groundless. There is a possible disadvantage in using a relaxant alone in that relaxation is not complete but in practice this does not matter because partial relaxation is adequate for nearly all cases. The patient may however be more restless in the recovery phase.

Advantages of relaxant given alone include:

1. Easier, quicker and safer administration.
2. Fewer attendants required. One doctor and one nurse, is minimum requirement.
3. Rapid recovery.
4. No anaesthetic complications.

There is much to be said for giving a relaxant drug with every shock treatment. In some clinics this is routine practice. These are usually clinics where the total number of treatments per session is small, and an anaesthetist is always available. Some authorities require two doctors to be present when ECT is given; others stipulate that an anaesthetist must always be present. The present trend is to take ECT out of the hands of the psychiatrist transferring it to the presumed safer control of the anaesthetist.

However, the great majority of treatments today are administered in the mental hospitals where facilities are not available for anaesthetists to be present when ECT is given. Treatments would be considerably restricted and indeed urgent treatments would not be easily administered if anaesthetists were required in all cases. Another consideration, and not the least important, is the legal position of the psychiatrist working alone, who is unfortunate enough to have a death or injury follow treatment. His position might indeed be hazardous if it became established practice

for an anaesthetist to be present during modified convulsive therapy.

The present trend is a retrograde one. It is uneconomic and merely increases the difficulties encountered in the treatment of patients. The writer hopes that the procedure outlined may yet become the established practice in this country.

SUMMARY

A standardised technique for modified ECT using succinylcholine chloride without an anaesthetic is described in detail. Differences from previous techniques are explained. The advantages of a safer, easier and quicker administration of ECT are stressed.

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CROSS TRANSFUSION IN SCHIZOPHRENIA

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In recent years, there has been much research as to whether or not a blood substance exists that is related to the schizophrenic reaction. Pfeffer and Pescor(1) performed exsanguination experiments with blood volume replacement in schizophrenic patients and were unable to demonstrate the presence of any toxin. This work has subsequently been repeated and validated. Winters and Flataker(2) reported changes in the motor performance of rats who were injected with schizophrenic serum. However, this finding could not be confirmed by Ghent and Freedman(5) who repeated the experiments. Heath, *et al.*(3) reported the presence of a blood substance which they had extracted by biochemical methods that produced a schizophrenic-like reaction in volunteers. These data have been difficult to confirm in other laboratories and have evoked a criticism by Siegel, *et al.*(4).

The cross-transfusion technique has been used many times in clinical studies of various diseases. It is not without risk, and a thorough study of the technique with a review of literature is reported by Salisbury, *et al.*(6). They also report in their own series a fatality. In a review of the literature on research in schizophrenia, no past study was found where a non-psychotic volunteer had been cross-transfused with an actively hallucinating patient. Accordingly, we undertook this study.³

MATERIAL AND METHOD

Our procedure was based on the simplest possible cross-transfusion method. It was performed with a 50 c.c. syringe used as a pump and No. 15 needles inserted into the antecubital veins of a patient and of a volunteer. The patient and volunteer were heparinized, and the volunteer received

an injection of Evans blue dye to determine the extent of blood exchanged. No other medication was given to the patient or volunteer for the 72 hours prior to the experiment, during the experiment, or during the several days after the experiment, with the exception of a course of Oxytetracycline administered prophylactically to the volunteer and the patient following the study.

The patient (F. F.) was a 39-year-old single, grocery clerk, of Mediterranean origin, who had been hospitalized for 19 years due to chronic schizophrenic reaction of the mixed type. He had hallucinations and delusions which were active. During the time before the experiment and during the experiment he was having auditory and visual hallucinations. He was also mildly paranoid at the beginning of the experiment, and had fluctuating bouts of catatonia. A physical examination and blood chemistry studies were within normal limits. Both the patient and volunteer were blood group "O," Rh- positive, and were compatible.

The volunteer (W. W.) was a 23-year-old married graduate student and conscientious objector. He was found to be a very gifted, creative individual of superior intelligence whose personality was within normal limits and without any evidence of psychotic response on his psychiatric and psychological examination. Blood chemistry studies were found to be within normal limits. Both the volunteer's and the patient's electroencephalograms were within normal limits. There was no evidence of any physical or neurological abnormality in either subject.

The procedure was carried out in a hospital operating room with surgical and medical supervision. Both the patient and the volunteer were given an initial control-run to make sure that neither would respond to the stimuli of the experiment. It was also planned that if any response should occur in the actual cross-transfusion a follow-up control study would be done.

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² Director of Research, Rockland State Hospital, Orangeburg, N. Y., where this experiment was performed.

³ We are indebted to S. B. Wortis, M.D. whose suggestions made this experiment possible.

RESULT

During a period of 6 hours, a total of 6,800 c.c. of blood was interchanged; that is, 3,400 c.c. was transfused from the patient to the volunteer and 3,400 c.c. from the volunteer to the patient. The Evans blue dye suggested that a minimum of 31% mixing of the two blood volumes occurred during this period. During the first 21 minutes of the experiment (Table 1) 1,000

TABLE 1
BLOOD VOLUME INTERCHANGE
RELATED TO ELAPSED TIME

<i>Time In Minutes</i>	<i>Blood Volume in Liters</i>
21	1 L.
100	2 L.
155	3 L.
233	4 L.
275	6 L.
362	6.8 L.

c.c. of blood was interchanged; that is, 500 c.c. being sent in each direction. During the first 45 minutes of the experiment 800 c.c. of blood were interchanged in each direction. The procedure was somewhat prolonged due to the need to flush the apparatus with heparin in saline periodically, and due to occasional clots.

Throughout the experiment, no apparent clinical changes occurred in the patient or the volunteer. The patient continued to have visual and auditory hallucinations. The volunteer showed no signs of hallucinations, no signs of catatonia, no signs of delusions, no ideas of reference, or other psychotic symptoms. About 4 hours after the cross-transfusion had been discontinued, the patient became more catatonic than he had been previously, and more paranoid. He continued to have auditory and visual hallucinations. This period of increased catatonia and paranoia in the patient lasted for 24 hours following the completion of the experiment. The volunteer showed no signs of any clinical change, psychiatrically. Thirty-six hours after the experiment both the patient and the volunteer showed a febrile response with the presence of ronchi and a few rales in the lungs of both. They were maintained following the experiment on a pro-

phylactic dose of Oxytetracycline and the febrile response in both disappeared within 2 days after the onset, and the Oxytetracycline was discontinued after 5 days of treatment. Follow-up studies of the patient showed a reversion to his previous fluctuating catatonic state and a decrease in his paranoia following the first 24-hour period after the experiment. However, he continued to hallucinate. His hallucinations have continued up to 5 months after the experiment. At the end of 6 months after the experiment when the patient was examined clinically he was not hallucinating although he was having occasional bouts of catatonia and did have ideas of reference and some paranoid ideas.

Psychological follow-up studies on the volunteer showed that he had markedly improved in his interpersonal relationships during and after the period of the experiment. There is apparently no reason to believe that the improvement was related to the exchange of blood. The apparent improvement was believed related to the enhancement of self-esteem which occurred in the volunteer, coincidental with the experiment. Also, during the period of the experiment, shortly before the actual cross-transfusion, the volunteer was married, and apparently his heterosexual and interpersonal adjustment improved markedly at that time.

COMMENTS

From the findings of this experiment, one can conclude that cross-transfusion of moderate quantities of blood in a relatively short time has no apparent ill-effects on a volunteer, when the cross-transfusion is between him and an actively hallucinating schizophrenic patient. Indeed, it would seem that the patient was temporarily worse following the experiment, and that the volunteer was improved by the study. While this raises some question as to whether or not there is a toxic blood substance that would cause a psychotic response in a volunteer, it also raises a question as to whether or not a normal blood substance was supplied to the patient in larger quantities than he had been accustomed to, and that his body converted it into a toxin which produced a more

profound psychotic response than he usually had, or if his change was a simple stress response. While this study does answer the immediate question as to whether or not ill-effects will occur to a volunteer from such an experiment, it does not definitely answer whether or not there is a blood toxin. It would suggest that it is probably psychiatrically safe for a larger quantity of blood than was used here to be exchanged in a shorter period of time between a non-psychotic volunteer and a schizophrenic patient.

SUMMARY

In this study of cross-transfusion in schizophrenia no clinically significant changes occurred in the non-psychotic volunteer, during or after the cross-trans-

fusion. The patient became psychiatrically more ill during the 24 hours immediately following the cross-transfusion.

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AKATHISIA: THE SYNDROME OF MOTOR RESTLESSNESS

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Akathisia is "a name given by Lad Haszkovec to a form of rhythmic chorea in which the patient is unable to remain seated" (1). Freyhan (2) quotes Kinnier Wilson's description of it in his chapters on encephalitic and idiopathic Parkinsonism as follows:

Not a few subjects complain paradoxically that they cannot "sit still" or do so only "with an effort"; they must get up, or move about, or shift the position of their limbs, inaction having become unbearable.

Freyhan (2) then gives his own excellent description of this condition:

If akathisia is mild, patients complain of a feeling of inner unrest, of pulling or drawing sensations in the extremities but chiefly in the legs. Once akathisia is fully developed, patients pace back and forth and can neither sit down to read or play or sleep. In severe cases, patients appear continuously agitated.

Akathisia is felt to be an unusual manifestation of the Parkinsonian syndrome. Goldman (3) points out that this condition occurs often without recognizable anxiety that can be verbalized.

Akathisia, then, can be defined as a variation of the Parkinsonian syndrome in which the patient is in a state of motor restlessness which may appear like an anxiety state but in which real anxiety can be neither recognized nor verbalized. This syndrome has recently been brought to widespread medical attention as the result of the introduction of a new tranquilizer, trifluoperazine (Stelazine). A significant number of patients are reported to develop akathisia during treatment with this drug.

Freyhan (5), in an as yet unpublished paper, has reported the occurrence of this syndrome during the administration of other phenothiazine drugs such as prochlorperazine, triflupromazine, and perphenazine. This is to be expected in view of the fact that the Parkinsonian syndrome is a well-known side effect of the phenothiazine derivatives and appears to be directly re-

lated to the dosage of the drug. Two cases have recently come to my attention in which akathisia, without other evidences of Parkinsonism, has occurred during treatment with large doses of phenothiazine drugs.

Case 1.—Patient B. C. had suffered injury to his left eye approximately 20 days prior to admission for treatment of a corneal ulcer. There had been a great deal of pain and a certain amount of apprehension about entering the hospital. By the time a psychiatrist was called, the eye was in good condition, and the pain had disappeared. The psychiatrist was called because the patient was pacing the floor, could not sleep, and had remarked "I feel like jumping out the window." During the psychiatric interview, he stated that since admission to the hospital he had become increasingly "nervous." He was usually reasonably well in the morning but became more hyperactive as the day progressed. He could not sit in any one place, paced the hall, could not sleep, and became quite fearful that something was happening to him. His own words can best describe his feelings, "When I sit there, I feel I should be sitting here. When I sit here, I feel I should be sitting there." With this increased motor behavior and restlessness, there was no mood change, no real apprehension, no depression. There was no disturbance of thought content. The patient just could not understand why he felt the way he did.

Examination of his chart revealed that he had been given increasing doses of tranquilizing drugs in an effort to control his "nervousness." At the time he was seen, he was receiving 8 mgs. of perphenazine (Trilafon) t.i.d. in addition to 100 mgs. of promazine (Sparine) q.i.d.

It was felt that this patient was in a state of akathisia. All tranquilizing drugs were stopped immediately. Chloral hydrate was given as a sedative, and Cogentin was started empirically in doses of 2 mgs. at bedtime for 3 days only. Within 24 hours the patient was markedly improved, and within 24 hours more he had no remaining symptoms of anxiety, tension or restlessness.

Case 2.—Patient J. P. a 20-year-old single white girl, was admitted to the psychiatric unit as an emergency because of bizarre behavior at home. She was found to be mildly

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hyperactive, hostile, aggressive, and delusional. Chlorpromazine (Thorazine) was started in dosages of 200 mgs. per day and was quickly raised to 800 mgs. per day. With the increase in dosage, there seemed to be a paradoxical effect in that she became much more hyperactive and disturbed. Her hostility diminished markedly, but she suffered extreme dryness of the mouth and had to drink water constantly. She could not sit still, constantly moving from one seat to another, leaving the room and returning, and essentially having a flight of ideas. The dosage of Thorazine was quickly diminished to 200 mgs. per day and then 100 mgs. per day, and Cogentin was added to the regimen in dosages of 2 mgs. per day. There was some improvement in the hyperactive behavior, but the delusions and hostility became prominent again. Thorazine was discontinued altogether and trifluoperazine (Stelazine) was begun in doses of 2 mgs. t.i.d., continuing the Cogentin. Within 36 hours, the motor restlessness abated, the dryness of the mouth disappeared and the expression of delusional and hostile material diminished markedly. The psychotic process, however, remained basically unchanged; and following a reasonable trial period of drug therapy, the patient was referred for insulin treatment.

SUMMARY AND CONCLUSIONS

1. The syndrome of akathisia has been defined and described. It appears to be a manifestation of the Parkinson syndrome.

2. Two cases of akathisia are reported. They both occurred during administration of phenothiazine tranquilizing drugs, and were relieved by changing or stopping the drug and by adding an anti-Parkinson drug. No attempt was made to determine the

necessity for adding the anti-Parkinson drug when the tranquilizer was changed, though Kruse(4) reports that "these reactions . . . were always controllable" by anti-Parkinson drugs alone.

3. Akathisia is a syndrome which occurs during the administration of high doses of tranquilizing drugs. Whenever a patient fails to respond to the administration of high doses of these medicines or when he seems to have a paradoxical effect from them, the possibility of akathisia should be considered and appropriate treatment instituted.

4. Appropriate treatment of the condition appears to be, at this time, a reduction or change in the tranquilizing drugs used, plus the addition of an anti-Parkinson drug such as Cogentin, Pagitane, or Kemadrin.

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THE REACTIONS OF GENERAL PRACTITIONERS TO A PSYCHIATRIC ABSTRACTING SERVICE¹

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In the spring of 1957 a series of seminars entitled Psychiatry for the General Practitioner was sponsored by the Carrier Clinic in conjunction with the Mental Health Committee of the Medical Society of New Jersey and the New Jersey Chapter of the American Academy of General Practice. The abstracts of the 18 papers presented aroused so great an interest and brought such a demand for copies that, with the aid of Smith, Kline and French, some 26,000 copies had to be printed and distributed throughout the country. Because of this widespread, and somewhat unexpected, interest an informal follow-up survey was carried out. It became readily apparent that, although the general practitioner was at times virtually inundated with pamphlets and literature of every description, there was a need for some form of abstracting service by means of which selected parts of the mass of technical psychiatric literature, written by one specialist for his equally special colleague, might be translated into more generally comprehensible language and consequently become of value to the general practitioner.

To meet this assumed need the Carrier Clinic of New Jersey introduced a quarterly publication entitled *Abstracts of Psychiatry for the General Practitioner*. The first issue appeared in the spring of 1958; it contained 30 one-page abstracts, culled from the recent world psychiatric literature. Some of the abstracts were relatively non-technical summaries of highly technical research or clinical contributions; others were essentially condensations of utilitarian, technically sound, but not very technical, articles from a variety of sources not readily available to the general practitioner. Casual

contact with a small sample of the 9,000 or so recipients of the journal suggested that many general practitioners would prefer the latter type of article, i.e. strongly utilitarian and of immediate aid in their everyday practices. The second issue was modified accordingly and the articles selected primarily on this basis. For example, topics treated in the second issue covered such diversities as the use of specific new medications, problems of addiction to tranquilizers, the psychiatric aspects of multiple sclerosis, the role of the psychiatrist in the treatment of Parkinson's disease, the differential diagnosis of momentary loss of consciousness, the psychiatric symptoms masking brain tumor, the treatment of the neuroses in general practice, rehabilitation of the blind geriatric patient and the counseling of parents of mentally defective children. All of these topics raise problems which the general practitioner might well encounter in his daily routine.

At this stage it became apparent that the only way to evaluate and compare these two issues and to find out what the general practitioner really requires from an abstracting service—if he requires it at all—was to carry out a systematic survey. Accordingly 496 names were selected at random from the 9,000 mailing list and a brief questionnaire was sent out, accompanied by an explanatory letter and a stamped and addressed reply envelope. The questionnaire was anonymous and had only 10 items, some of which required a Yes/No type of reply, others a rating and some brief written comments.

Of the 496 questionnaires sent out, only 52 were returned. This 10% return is consistent with physician reply ratios obtained under similar circumstances by other investigators. The question now arises of how representative of the general sample of 496 are the 52 who replied. It might be speculated that only the more interested and therefore, perhaps, the more favorably

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa. April 27-May 1, 1959.

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disposed would bother to reply. To investigate this possibility, 30 additional randomly selected general practitioners were interviewed either directly or by telephone and essentially the same questions asked, but in considerably more detail. Although this group is small, and hence subject to some reservations in drawing any conclusions, the trend of their replies failed to differ significantly from those of the larger sample who responded to the written questionnaires. On the contrary, the resemblances were striking, suggesting that the 52 written replies may be judged as reasonably representative of *Abstract* readers in general.

Of the 52 returned questionnaires two were blank, one because of the decease of the physician concerned and one for no apparent reason. Of the remaining 50 questionnaires most, but not all, were fully completed. Hence the number of replies varied slightly from question to question. Most, but not all, general practitioners recalled receiving both issues, some few recalled receiving neither. One respondent checked "neither," then, in an invited comment question, strongly complained of this failure to send him the journal and finally, in a question which called for suggested improvements, complained bitterly that the journal was "far too technical and complex." Fortunately such curious inconsistencies were rare and it was reassuring to observe that almost everybody who reported receiving both issues had taken the trouble to look at both issues.

Most of the replies were very much in favor of the *Abstracts* and their continuation, provided that the articles were of utilitarian value in general practice. Apparently what is required is guidance in a do-it-yourself program with some indications of its limitations and the sort of psychiatric cases and occasions when specialist help must be sought. If replies such as "helps me to evaluate and attempt to take care of patients that would ordinarily have to be sent to the psychiatrist immediately" are indicative of things to come, then, perhaps, not all psychiatrists will be as appreciative of this new service as are the general practitioners.

Comments were repeatedly expressed to

the effect that the general practitioner is primarily interested in concise, practical articles which will be of value to him in his practice. He is not, in general, interested in keeping ahead of current research developments or new theories. Above all, he wants the articles to be abstracted in a language which is as devoid of technicalities or psychiatric jargon as possible, especially psychoanalytic terms. Perhaps not unnaturally, this veto does not apply to pharmacological or general medical jargon; in other words, abstracts must be readily comprehensible to the general practitioner and utilize his *own* jargon, not any one else's.

From Table 1 it is clear that the *Abstracts* has made some impact upon those who received it and that the second, and more practical issue, is the more popular—although a surprisingly large proportion of readers apparently have no strong preferences. Both questionnaire and interview techniques confirmed that the present format is satisfactory in almost all respects and that a quarterly journal containing some 30 abstracts is ideal.

One of the more revealing questions was that in which the physicians were asked to rank 4 different topic areas in order of interest and then add further comments if they felt so inclined. Both statistical ranking and additional comments indicate that there is a distrust and an aversion to many psychoanalytic concepts as well as a lack of interest.

It may be of interest to record briefly some particularly relevant findings from a related but independent study which is to be reported elsewhere. In a recent survey of reactions to the second Carrier Clinic Seminar Series of Psychiatry for the General Practitioner, held in the fall of 1958, questionnaires were sent out to those general practitioners who had attended part or all of the lecture program. Eighty-nine questionnaires were sent out, 59 replies were received. The 12 questions were similar to those asked in the *Abstracts* questionnaire and, once again, strict anonymity was preserved.

Before discussing these replies a note of caution must be sounded. The information obtained from this questionnaire was in-

TABLE 1
STATISTICAL ANALYSIS AND SUMMARY OF REPLIES TO
ABSTRACTS QUESTIONNAIRE
(n=50)

Item	Percentage
a. Recalled receiving copy of Journal	94
b. Read or scanned copy of Journal	92
c. Believe that abstracted articles should be more utilitarian and cover less technical subjects :	
Yes	34
No	52
No opinion	14
d. Found second issue of more interest than first	26
Found first issue more interesting	6
No difference	30
Item not completed or not applicable	38
e. Too many articles abstracted per issue	19
Too few articles abstracted per issue	5
About right	76
f. Would welcome an article on when to refer a psychiatric problem elsewhere	96
g. Would welcome an article on state and voluntary commitment laws and procedures	54
h. Ranked order of interest of the following four topics :	
1. psychosomatic medicine	47*
2. treatment of psychiatric patients by the g.p.	15*
3. drugs	6*
4. psychoanalysis	1*

*Note : These figures are not percentages, they are obtained as follows : For each topic the number of times the topic was placed first was divided by the number of times it was placed last. These four ratios were then expressed in terms of the smallest as unity by dividing throughout by the smallest, the final figures being corrected to the nearest whole number.

tended to help in the presentation of an even better third seminar series in the future. Since the 89 recipients were already sufficiently interested in psychiatric problems to take the trouble to attend at least part of the preceding seminar series, they can, in no sense, be considered a random sample from the population of general practitioners. It is therefore hardly of value, or surprising, to learn that over 90% of the replies indicated strong interest in psychiatric problems and a desire to receive further material provided that it were prepared specially to meet their needs. What is of significance is the answers received to questions concerning specific topics for future discussions. The needs expressed here coincided almost precisely with the needs expressed in the Abstracts questionnaire and many suggestions obtained which would be of value in the future planning of both Seminars and Abstracts.

A strong interest was expressed in the

many problems associated with the management of the mental defective and his relatives. Other physicians were concerned about their lack of knowledge of the subtleties of office interview and treatment techniques. As one physician confessed,

I feel a little inadequate in office interviews, where my stethoscope, thermometer, and examination table are removed. Also, in treatment, where my hypo needle, prescription blank, etc., are taken away. What can you do to help me? Your course has already helped a lot and your publicity angle with the newspapers has let many of my former patients know I was interested. They now come expecting more time and interest. What can you do to help me further in helping these people?

In the Seminar survey, as in the Abstracts questionnaire, it became apparent that, as a group, general practitioners are primarily interested not in research, theoretical principles or abstract cases but in specific

problems, their recognition and their treatment.

Returning now to the *Abstracts* questionnaire, many useful suggestions were received. Although most physicians were apparently satisfied with the existing procedure, several readers suggested that each issue be confined to one or two subjects which could then be treated more thoroughly. Other specific suggestions occurring more than once were for the inclusion of articles on the therapeutic use of hypnosis, on the management of problems relating to mental deficiency, on medico-legal problems pertaining to mental abnormality, on the differential diagnosis of retarded, brain damaged and schizophrenic children and articles on the treatment by the general practitioner of specific disease entities and specific psychiatric problems, especially the mildly neurotic patient.

Several physicians commented sadly that their medical school training had provided them with little or no psychiatry and that this gap became more and more apparent as their office practice increased. What many physicians apparently require is some guidance in interviewing techniques and the methods by which danger signals may be recognized in time. One problem which seems to arouse much anxiety in the general practitioner is that of the patient's anxiety, how to avoid its arousal and how to cope with the situations when it occurs. An associated problem is how best to avoid manipulation by certain patients.

Running through the responses to the Seminar survey, to the *Abstracts* questionnaire and to the direct interviews were a small number of comments pertinent to the general practitioner's personal reactions and to the gradual development of insight following exposure to basic psychiatric concepts and modes of thought. One general practitioner, although not in these words, discussed the problems of counter transference and the gradual realization of the important part that he himself played in the treatment of a particular patient, even though the ailment was primarily a physical one. This was particularly brought home to him during one period when he did not feel well himself and was conse-

quently inclined to be terse and irritable in his dealings with patients. Gradually he awakened to the fact that his patients were getting very little out of their visits to him on these occasions and that they weren't even responding to simple suggestions relative to the method of taking their medication. This physician went on to report how meaningful it was to begin to understand his own emotional attitudes towards his patients.

Another physician commented that he was now able to recognize that he became persistently annoyed with a particular patient whom he had hated for many years. As a result of the literature he had read and the Seminars he had attended he is now able to realize much more clearly what had been happening between himself and the patient he had despised so much. This physician further reported that, with his change of attitude, he was able to sense a positive response on the patient's part.

A number of general practitioners reported that they felt terribly guilty about seeing patients with psychiatric problems, or confirmed neurotics. They recognized that actually they did not want to see them and they felt uncomfortable about carrying patients along for a prolonged period of time and giving them nothing more material than "talk" to help them with their illnesses. Each of these general practitioners then related that he is now much more aware of his necessary role in the patient's treatment and that, since he has reattained this awareness, he has been able to change his own attitudes towards his patients. The first practical step taken as a result of this developing insight was a rescheduling of office visits to allow more time for discussion of the many emotional factors involved.

The report of one physician is worthy of direct quotation. It reads as follows:

I have been doing many of these things in my relationships with my patients all my life and never gave myself any credit for it. Now that I have some understanding of the mechanisms involved I am certainly going to give myself credit—so now I like myself better.

SUMMARY

In conclusion and summary then, the

Carrier Clinic Abstracts of Psychiatry for the General Practitioner seems to be fairly successful in meeting a recognized need of the general practitioner for practical information and guidance about commonly encountered psychiatric disorders. It is apparently also serving a function which is not quite as well recognized as a need by the average general practitioner—namely the need to develop partial insight into personal reactions and into doctor-patient interactions regardless of the nature of the presenting complaint.

The editors and abstracting committee would be advised to develop their searching and abstracting techniques in two different directions. First, they have to recognize that a wealth of practical material of direct value to the general practitioner sometimes lies obscured beneath a mass of technical detail and highly professional idiom which is frequently only intelligible to the specialist and his specialized cohort—and sometimes not even to them. It is the task of the editors to discover, translate and edit the relevant portions of these articles and present them to

the general practitioner in readable, yet still accurate, form. Second, they have to seek out, condense and collect under one roof the more significant of those non-specialist psychiatric articles which lie scattered from time to time throughout the 3,000 or so medical journals which appear regularly somewhere in the world. Here the problems are primarily those of wise selection and good condensation.

From the point of view of prospective authors the urgent need seems to be for concise and up to date information on the various problems associated with state and voluntary commitment procedures for mental patients. The other area where more articles are required is that of practical "know-how," a sort of do-it-yourself manual for the family physician who has to cope with a wide variety of direct and reactive neurotic conditions in his general practice. Included in this latter type of article would be the provision of information and warning signs which might advise the physician when to consider seeking more specialized psychiatric help elsewhere.

FACTORS IN THE SUCCESS OF A PUBLIC MENTAL HEALTH PROGRAM

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PROBLEMS

The current popularization of mental illness as one of the country's leading problems of health, coupled with a widespread intensification of interest in the conservation of mental health and the prevention of mental illness, has alerted communities to the need for public mental health programs. The last decade has witnessed the development of a number of such programs which in many instances have enjoyed less than hoped for effectiveness owing to a variety of factors, the most important of which follow.

1. *Widely prevalent gaps and deficiencies among preventive, therapeutic and reconstructive services.*—The common experience, as related by mental health administrators in many places, has been an almost universal tendency to develop extensively those services that are traditional and easily understood. Therapeutic programs, institutionally oriented as a rule, although in short supply, are much more readily available than preventive and reconstructive programs. The discontinuity of service thus realized tends to limit the total value of therapeutic efforts and to permit a fairly extensive rate of relapse among patients served. The effectiveness of the mental health program prior to 1956 in Philadelphia in terms of treatment services can be approximately measured by an average year's experience of the Philadelphia General Hospital, psychiatric division. This unit has served as the major admission resource for most citizens seeking public

psychiatric care, and during the past several years has treated some 1,800 patients per year. Two-thirds of these patients have been returned to the community in various stages of improvement after an average stay of about 40 days. The relapse rate computed on the basis of readmissions within a year has been about 20%.

2. *Administrative divergence among agencies responsible for various aspects of program, including failure in mutual intercommunication.*—In most populous localities mental health activities are found in a great variety of agencies. Therapeutic services are generally offered in state operated inpatient facilities, voluntarily operated inpatient general and psychiatric hospitals, clinics under multiple auspices, specialized units under the courts, under public and private health agencies as well as in numerous service groups ranging from care for dependent and neglected children under Welfare Departments to family service agencies. Customarily such service units are autonomous and are relatively unrelated programwise to analogous facilities throughout the community.

3. *Absence of definitive information about communities' mental health needs and resources.*—Professional and non-professional organizations attempting to translate the mental health needs of a given community into service units have almost uniformly discovered a scarcity of accurate local demographic, prevalence and incidence statistics as well as a paucity of valid formulae for the development of new units or the expansion of old ones.

4. *Omission of a centralized multipurpose official mental health agency capable of integrating and coordinating the network of communications.*—Many communities desirous of establishing and developing mental health programs have discovered the absence of a unifying body; or, where present, such mental health agency is often found to be limited in its scope of influence and operations.

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., April 27-May 1, 1959.

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FIRST STEPS

The Commonwealth of Pennsylvania and its major metropolitan area, Philadelphia, undertook in 1952 and thereafter to correct the obstructing factors. The resultant experience in mental health programming possesses unique elements of cooperation, integration, and coordination, which may well merit the attention of planning bodies desirous of establishing mental health programs.

The first significant events were the following :

1. *The utilization of a comprehensive public health survey of Philadelphia.*

The local health and welfare council accomplished a survey and report now known as "The Philadelphia Public Health Survey of 1949." Among its 192 unusually apt recommendations was the suggestion, widely supported, that there be either a Bureau or a Division of Mental Health in the City. This report later served as an important reference point in the development of an intensified municipal public health program.

2. *The metropolis' acquisition of a "Home Rule Charter" by referendum.*

The citizens of the municipality adopted a new city charter in 1952 which provided the basic administrative structure for the renaissance of a great city and also provided the philosophical foundation for municipal government capable of devoting efforts to services to people. Since the city and county of Philadelphia are identical geographical regions, the charter provided for the abolition of the bulk of county governmental offices, thus making it possible for the City to negotiate directly with the State in the establishment and joint support of tandem services.

3. *The arrival of City and State administrations dedicated to the establishment of service programs.*

The City of Philadelphia in 1951 and the Commonwealth of Pennsylvania in 1955 elected governmental administrators, who, among a variety of community interests, were dedicated to improving the overall mental health program. The foresightedness, courage, and perseverance of the officials involved helped make into a reality the mental health program reform.

4. *The development of a Mental Health Division within the City's Department of Public Health.*

In 1954 there was established within the Public Health Department of the city its first

mental health division. Its main function was to become a medium of expression of the organizational and related needs of mental health agencies that already existed in the community and whose services and functions could be enhanced through a central coordinating body affording a focal point for all mental health programs. The division recognized its further responsibility to insure the provision of adequate services and clinical facilities to meet the community's needs, supplementing the resources of voluntary organizations or higher governmental agencies as required and to the extent possible.

5. *Legislative establishment of a State Office of Commissioner of Mental Health in the Department of Welfare.*

The traditional position of Commissioner of Mental Health had been that of consultant to the Secretary of Welfare. A new law, enacted in 1955 establishing the new position of Commissioner of Mental Health with a 5-year tenure of office, gave the Commissioner full authority to initiate and coordinate mental health programs throughout the Commonwealth in accordance with defined needs.

An informed and aroused public, embarrassed by national statistics and local conditions which had given the State a rather poor grade on the national mental health report card, found its voice in joint relationships among the many agencies whose coordination and integrated programs have now created some models of efficiency. Historically, the state mental health unit located in the Department of Welfare had encountered uniform difficulty in attempting to establish local progressive mental health programs throughout the Commonwealth. This was largely owing to the absence of a local planning and programming body to which the state unit could relate its activities.

The City of Philadelphia, a community of over 2½ million people in a State of about 11 million, for many years felt that it had not received a fair return from its tax contributions through a prorated proportion of mental health services. As a consequence there was a chronic state of disagreement between the two echelons of government. The mental health services available to the community were grossly inadequate. In an effort to rectify this situation and because the city had developed a receptive

unit ready to integrate mental health services, officials from the state and the city met to determine how best to merge their respective plans and resources.

In 1955 the state legislature allocated to the Dept. of Welfare a large sum of money to improve the overall mental health program and to bring into every community within the state a mental health program that could really meet local needs. A merger between the state and the city programs became a reality in July, 1955. In order for such merger actually to take place it was necessary at the outset to create unitary leadership over the two programs. The director of the city's division of mental health was appointed to serve concurrently in the capacity of regional director of the state mental health program. The region was designated as the City of Philadelphia.

Under such unitary direction it became possible to integrate the two programs, while keeping their major aspects discrete. The community program became almost exclusively preventive and rehabilitative mental health, while the state program provided in- and outpatient services and clinical facilities.

Prior to the merger, Philadelphia could boast of only 268 beds at its disposal for the admission and intensive treatment of psychiatric problems arriving from all quarters of the municipality. The city each year was able to process some 1,700 or 1,800 patients from a potential resource of over 150,000. This meant that for every patient accepted for inpatient services, about 5 to 10 were returned to their homes without immediate care. As a rule only the most seriously ill patients were accepted. In addition, the one state hospital in the city, originally built to house some 4,300 patients, had a swollen census of approximately 6,700 patients without additional facilities. As a consequence a balance had been struck between the Philadelphia General Hospital psychiatric unit and the State Hospital so that about 10 patients per week were transferred from the General Hospital to the State Hospital. This rate was maintained no matter how urgent became the needs of the community.

Prior to the merger the city also had the

equivalent of about 18 psychiatric outpatient clinics mostly for children. About 43 were needed. In general few needed services in the field of public mental health were available.

In accordance with the principle of first things first, emphasis of the merged program was placed initially on the needs of the mentally ill; in most instances needs for hospitalization. The endorsement of the new program in 1955 by the psychiatric departments of the city's 5 medical schools, the state hospitals in and about the city, the involved general hospitals, the psychiatric and psychoanalytic institutes, clinical agencies, the voluntary and official health and welfare units as well as responsible authorities made it possible to regionalize the mental health program as well as to develop cooperative services. A mental health orbit and a pattern of communications were established.

THE CONJOINT BOARD

The regional director's first step was to create a governing board of control over the local program. This planning body became known as the Conjoint Mental Health Board and was made up of the following individuals: the State Secretary of Welfare, the City Commissioner of Public Health, the City Commissioner of Public Welfare, the State Commissioner of Mental Health, the Regional Director, the Executive Director of the City General Hospital, the Superintendent of the Philadelphia State Hospital, the Executive Director and chief health consultant of the Health and Welfare Council, the Professor of Psychiatry of the University of Pennsylvania, the Executive Director of the regional Mental Health Association, and the Executive Director of the Eastern Pennsylvania Psychiatric Institute.

At the outset the Conjoint Board met weekly, sometimes oftener, in order to facilitate program development. Individual meetings were long and the debate extensive. An atmosphere of freedom for "talking and thinking through" the complexity of problems was regarded a *sine qua non* in order to develop the objectivity required by the leadership of a merged group of

independent agencies. Later the Board met monthly on a regular schedule.

For the purpose of unifying admissions to various units, of evaluating incoming patients and making the best possible use of existing facilities, a reception center was created at the City General Hospital. Thirty-two beds were later made available here. This unit was staffed with several complete mental health teams able to perform intensive, high caliber, rapid diagnostic screening. Whereas this unit was obligated to receive and evaluate all individuals referred to it, it was not obligated to hospitalize them. A policy was established that where hospitalization was postponed or obviated, some further care was provided. This eventuated in a referral program as well as an outpatient service operating at the center and offering follow-up as well as definitive therapies as indicated. The education and indoctrination of all community agencies and improved utilization of all existing mental health facilities were effected in large measure through the clinical activities of the reception center.

As an outlet for the Reception Center, an orbit of 4 clinical inpatient units was established consisting of the following: the psychiatric unit of the Philadelphia General Hospital with 268 beds, the Philadelphia State Hospital with its acute and intensive therapy and admitting unit of 285 beds, the Eastern Pennsylvania Psychiatric Institute with a potential of 50 beds for children and 250 beds for adults, and a 100 bed psychiatric unit for adults and youth at the Mercy-Douglass Hospital operated under the psychiatric department of the University of Pennsylvania School of Medicine with funds received from the State Dept. of Welfare.

The reception center was placed organizationally under the Philadelphia Regional Office which represents the point of liaison between the state and the city. In Philadelphia the program was created before the administrative device. Thus it may be said that the administrative device was the creature of the program. The Conjoint Mental Health Board supervised the entire program and became the topmost policy making group in its administration. This still operating Board is "unofficially offi-

cial" and has gained considerable status in the community. It may be thought of as analogous to a mental health authority. The Board's recommendations have been traditionally regarded as directives by the State Department of Welfare.

Since in 1955 the State Secretary of Welfare and the State Commissioner of Mental Health had assigned authority to the Conjoint Mental Health Board to pass on grant-in-aid requests coming from any mental health agency in the community, the Board developed a subordinate project-evaluating unit known as the program and allocations committee, which was made up of the regional program staff and appropriate community and professional representatives.

The direct operation of the reception center at the outset was under a board of control known as the admissions and policy board. This group consisted of the junior opposite number of the major administrator of each clinical unit represented in the total orbit of facilities, plus the staff of the regional program. An additional advisory unit was established under the admissions and policy board and was designated the sub-committee on services to emotionally disturbed children. Several *ad hoc* committees were likewise established for circumscribed areas of program. The considerations and deliberations of the various units, as well as the specialized experiences of their members, constituted a kind of built-in self evaluative device for the entire operational program.

PROGRAM EFFECTS

The major mental health program that followed upon the inception of the various planning units was developed in most instances without need for special legislation. Important benefits were realized quickly. When the program began, on any single day in Philadelphia there were about 150 so-called "mental patients" in the city's prisons. They consisted of epileptics, mental defectives, the retarded and psychotics of various age groups. To remove such patients from the correctional institutions, it was necessary to make room in the local state hospital.

Three regional private facilities were

brought into the program through state subsidization via a boarding-out program. A private mental hospital, a private hospital for the care of the aged and chronically ill, and a well equipped and operated nursing home were pressed into service. Each accepted 50 patients from the public mental hospital for an agreed upon daily stipend. Appropriate aged and long-term patients were selected and transferred to the newly participating units.

Almost immediately it became possible to remove to the new units persons who had been placed in protective custody in the prisons and who came under the jurisdiction of the mental health program. Subsequently all patients placed by the lower courts in temporary custody in prisons were directed to clinical services in a matter of hours through the mental health program, and it has been possible to keep out of prison mentally ill persons without criminal complications. At a later date, when the boarding-out program was no longer necessary, it was still possible to process the mentally ill through the reception center and to keep them out of jail.

As increasing numbers of persons utilized the mental health program, negotiations were completed with private mental institutions to accept at reduced rates, patients from the less favored socio-economic groups.

New preventive and rehabilitative services within the community were introduced, including an intensification of the city's preventive mental health program utilizing a variety of public education methods, systems for professional development, and counseling and advisory services in educational institutions as well as maternal and child health units. In addition, mental health units were established in each of the city's district health centers while a mental health home visit and home care program was established making use of the traditional cooperating disciplines of psychiatry, psychology, psychiatric social work and public health nursing to which were added the public health clinical laboratory and the general medical services of public health physicians. Municipally operated mental health conferences and clinical services were established for pre-school

age children throughout the city. The "open door policy" was introduced in the state hospitals, and a vast "remotivation" program was developed for long-term patients.

Rehabilitation units in the community, including modified half-way houses, vocational guidance centers and sheltered workshops as well as specialized residential care units of various types, were pressed into service for all age groups, with special emphasis upon the readaptation to community living of discharged patients from regional institutions.

SERVICES TO AGE GROUPS

The needs of the mentally ill aged received particular attention. Voluntary and official agencies undertook to improve the standards of care in nursing homes and homes for the aged while training devices for superintendents and administrators of care facilities for the aged were developed and employed. A number of carefully developed and interlacing studies of the needs of an aging population were completed by several participating units with the result that there emerged new methods of dealing with the problems of older people as well as new systems of financing with public funds. A truly unique cooperative venture among the State Department of Welfare, the City Department of Public Health and the City Department of Recreation brought into being a health oriented preventive mental health service for older adults; known as the Adult Health and Recreation Center.

The member units of the public mental health program merged with counterpart agencies serving youth and succeeded in establishing a large scale group psychotherapeutic program for juvenile offenders and cases of misbehavior. Responding to the advancing needs of a growing mental health program, the public school system of Philadelphia developed two mental health units among its intrinsic services. One of these was designed for short term psychiatric counseling to teachers, while the second served as the diagnostic, evaluating and screening unit for the emotional needs of selected school children, effecting referrals to clinical facilities as indicated for protracted therapy. Group treatment

methods were introduced into the correctional institutions under the Philadelphia Department of Public Welfare as well as in the probationary units under the municipal courts.

A vast survey of mental health facilities available to the community eventuated in the publication of a Mental Health Directory and Handbook of Mental Health Facilities which was widely distributed to appropriate persons and agencies in the entire Philadelphia Metropolitan area. The latter measure made possible better utilization of a wide assortment of available mental health agencies whose services and programs thus became better known to the professional disciplines.

PROCEDURAL CHANGES

New systems of commitment, referral and transfer were promoted. Outstanding among the latter was the development of a petition procedure initiated by the City's division of mental health, approved by the municipal courts and honored by the Police Department which authorized the use of the police-ambulance service for the conveyance of involuntary patients to the reception center for diagnostic evaluation in emergency situations. Cooperation was solicited and readily obtained from the legal departments and courts of both echelons of government. Innovations in services and procedures whose necessity was validated were sanctioned without delay.

The psychological, research and statistics units of the mental health division of the city and of the state's regional program joined forces in establishing and maintaining statistical control over the entire program. A variety of research projects was embarked upon. The results of such studies served as continuous guides to further programming. Clinical centers under voluntary auspices were expanded and extended wherever possible. Federal, state and local funds were directed to appropriate units with the result that outmoded facilities were enabled to rebuild and build anew in-service units for all age groups. Voluntary general hospitals were encouraged and aided in the development of inpatient psychiatric units.

Since the 5 medical schools of the city

had merged psychiatric interests at the Eastern Pennsylvania Psychiatric Institute while the mental hospitals and the reception center programs converged at the Conjoint Mental Health Board, and since the people of the city as well as the interests of all other psychiatric facilities and related agencies joined forces at the Division of Mental Health, the axis of these 3 units, Division-Board-Institute, constituted the nerve center of the regional mental health program.

THE RECEPTION CENTER

Undoubtedly one of the most outstanding features of the entire regional mental health program has been the establishment of the reception center operated under state auspices and located in the Philadelphia General Hospital. This unit began operation the middle of 1958. Its program and activities have mushroomed to an unprecedented degree. Its 1958 statistics are testimony to the importance to the community of this unit. In that year the reception center treated 5,087 patients, 4,012 of whom were first admissions and 1,047 re-evaluations. In addition this unit conducted 2,846 follow-up visits. After beds were made available in May of 1958, the reception center itself served 934 patients on an inpatient status and released such patients to the community. To accomplish its services this unit employed 8 full-time and 2 part-time psychiatrists, 8 residents for night and weekend service, 1 internist, 2 full-time psychologists, 3 full-time social workers, 6 registered nurses, 7 practical nurses, 15 attendants, 3 food workers and 8 clerks.

It is to be noted that each of Philadelphia's 5 medical schools (plus about 70 other establishments) conducts outpatient psychiatric clinics where patients requiring hospitalization are seen. The professors of psychiatry state that the fact that the reception center exists as a distribution point to other hospitals has been a great service to the clinics and has saved much staff time. In addition to patients being referred from clinics related to the teaching hospitals, patients requiring in-service care frequently are brought to university receiving wards. Through the division of mental

health the help of the Police can be readily obtained and has often been of great value.

An additional example of the cooperative relationship among participating units in the regional program is the utilization of the reception center as a source of patient material for research projects being conducted by the medical schools or other academic units. The 4 inpatient facilities that constitute the regional mental health orbit provide adequate facilities for psychiatric teaching in medical centers. Many additional services, programs, and projects have been in operation as a development of the program, but their description is not within the scope of this paper.

The program has gained momentum with the result that greater numbers of persons receive treatment earlier and are returned to community effectiveness sooner than was predicted by even the most optimistic observers. The success of this program was achieved largely through the better utilization of existing facilities.

NEW PROBLEMS

While the mental health program to a large extent represents a successful venture in which the community and its surrounding Commonwealth take considerable pride, it is well to point out that each solution to a problem has usually uncovered new problem areas. Facilities for the inpatient care of children are still present in inadequate numbers; emotionally disturbed children tend in numerous instances to back up into units inappropriate for their care. Therapeutic and preventive services for the aged are still available in only token measure. More public mental hospital beds are still needed in this geographical area. Consideration is now being given to the question of building new state psychiatric units as against the possible subsidization of voluntary facilities. Budgetary limitations continue to modulate the growth and progress of the program. Increasing effectiveness and popularity of the program bring ever increasing numbers of patients to the mental health units, thus producing bottlenecks, with the result that emergency care becomes protracted for many individuals for whom hospitalization would probably be more desirable.

Perhaps one of the most attractive features of the program has been its use of bits of programs and services operating in many places and which have been incorporated into a unified overall operation. The following are a few examples. The inspiring success of England's state institutions encouraged the local mental hospitals to open many wards; the home care program has been patterned to a considerable extent along the lines of that in operation in Amsterdam, Netherlands; the experience of the State of Massachusetts with respect to services for the aged was used early as a blue-print for the Philadelphia program; a foster care program patterned after that in Maryland has been found eminently successful in caring for substantial numbers of former inpatients; the programs of New York's recreation centers for the aged were emulated in developing the adult health and recreation center in which the novel feature has been the incorporation of psychiatric and other medical and surgical services, consultations and referrals; New Jersey's Menlo Park experience with youth in trouble served as a guide to the state-city regional program for youngsters with behavior problems; a New York unit of identical name was emulated in Philadelphia's Fountain House community readaptation program; the day center principle of Montreal was studied for local development; and Ohio's program on mutual patient transfers between homes for the aged and mental institutions was duplicated locally.

SUMMARY

The following factors have likely been paramount in the operational success of the Philadelphia regional mental health program:

1. Excellent timing of the program coinciding with the peak development of interest and goodwill on the part of an informed public and dedicated governments;
2. Intensified and continuous communication among popular representatives, professional staffs and political bodies;
3. Creation of two important cooperating governmental mental health units—the

Philadelphia division of mental health within the Department of Public Health and the State of Pennsylvania's office of the Commissioner of Mental Health within the Department of Welfare (now Public Welfare);

4. Establishment and continuation of the Conjoint Mental Health Board;

5. Creation and intensification of the programs of the reception center;

6. Maintenance of continuous and perpetual statistical control over all aspects of the program;

7. Constant application and initiation of

various researches and surveys including program self-reevaluation;

8. Attention to all of the community's mental health needs in a comprehensive program;

9. Utilization of operational elements proved effective in other localities (profiting vicariously from others' mistakes);

10. Involvement of the lay and professional communities wherever possible;

11. Encouragement of leadership at the lowest possible echelon of responsibility in the overall administrative pattern.

12. Giving credit where due in public and press relations.

CLINICAL NOTES

PSYCHOPHARMACOLOGICAL AGENTS: A SELECTIVE SURVEY¹

JAMES P. CATTELL, M.D.²

Each drug is listed as follows: chemical (generic) name, rating (see below), registered name and manufacturer, range of daily dosage, side effects and general comments.

Rating Scale: Each drug is rated according to the following system:

Effectuality:	Toxicity and Side Reactions:
Good-1	Mild-A
Fair-2	Moderate-B
Poor-3	Marked-C

Thus, an effectual drug with minimal toxicity and side effects is designated: 1A; an ineffectual drug with marked side effects or toxicity: 3C

I. The Neuroleptics (used primarily for psychomotor agitation).

A. Phenothiazine Derivatives:

Chlorpromazine, 1B (Thorazine-SKF), 25-250 mg. q.i.d. Jaundice, liver damage, agranulocytosis, urticaria, contact dermatitis, photosensitivity, GI syndrome, Parkinsonism, akathisia, convulsive seizures, depersonalization, depression, hypotension, drowsiness, fatigue and cataleptic seizures reported. Possibility of liver damage warrants greatest caution.

Promazine, 2B, (Sparine-Wyeth), 50-250 mg. t.i.d. Same side effects as chlorpromazine. Less photosensitivity and jaundice but higher incidence of seizures.

Mepazine, 2C, (Pacatal-Warner-Chilcott), 25-50 mg. t.i.d. Same side effects as chlorpromazine but possibly more agranulocytosis, seizures and atropine-like action. Regarded by some as

ineffectual and too toxic for general use.

Prochlorperazine, 2B, (Compazine-SKF), 5-30 mg. t.i.d. Fewer side effects than chlorpromazine but higher incidence of Parkinsonism, akathisia, dyskinetic syndrome.

Perphenazine, 2B, (Trilafon-Schering), 2-6 mg. t.i.d. Fewer side effects than chlorpromazine but marked akathisia and dyskinetic syndrome as well as convulsive seizures, cataleptic attacks in children and galactorrhea and angioneurotic edema. Relative effectuality: controversial; regarded as equal to chlorpromazine by some.

Promethazine, 3A, (Phenergan-Wyeth), 100-150 mg. daily. Harmless and ineffectual.

Trifluoperazine, 2B (?), (Vesprin-Squibb), 100-150 mg. daily. Relatively new. Agranulocytosis already reported. More data needed.

Trifluoperazine, 2A (?), (Stelazine-SKF), 1-8 mg. t.i.d. Fewer side effects than chlorpromazine. Parkinsonism, akathisia, dyskinetic syndrome, agitation and turbulence prominent—mostly controllable by anti-Parkinsonian drugs or reducing dosage. Further data needed.

Thiopropazate, 2B, (Dartal-Searle), 2-10 mg. t.i.d. Parkinsonism, akathisia and dyskinetic syndrome prominent. More data needed.

Piperidinochlorphenothiazine, 1C, (NP 207-Sandoz). Produced retinal degeneration during investigation phase. Never marketed.

Acepromazine, ?B or C, (Notensil-Crooks-Barnes?), ? dose. Hypotension, seizures, loss of peripheral reflexes. (Has been withdrawn from investigation?).

Thioridazine HCl, 2A, (Mellaril-Sandoz), 25-200 mg. t.i.d. (TP 21—when under investigation.) More data needed.

B. Rauwolfia Alkaloids:

Reserpine, 2B, (Serpasil-Ciba; also other

¹Based on literature available about each drug as of June, 1959 and our experience at the Columbia-Presbyterian Medical Center. Dr. Sydney Malitz, Acting Chief Research Psychiatrist, N. Y. State Psychiatric Institute has made a significant contribution to the application of the rating scale in the survey. His cooperation and assistance are appreciated.

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companies), 0.5-1 mg. b.i.d. Jaundice and agranulocytosis not reported. Skin reactions, Parkinsonism, akathisia, dyskinetic syndrome, seizures, depression with suicidal ideation, depersonalization, hypotension, drowsiness, fatigue, excitement, edema and rupture of peptic ulcer reported.

Deserpidine, Canescine, Recanescine, 3B, (Harmonyl-Abbott), 0.24-2 mg. t.i.d. Fewer side effects claimed than with reserpine. Further data needed.

Rescinnamine, 3B, (Moderil-Pfizer), 0.25-0.5 mg. b.i.d. May be as effectual as reserpine but with fewer side effects. Further data needed.

II. The Tranquilizers (for anxiety-tension states).

A. Diphenyl Methane Derivatives :

Azacyclonal, 3B, (Frenquel-Merrill), 200-400 mg. daily. An analogue of pipradol HCl. Introduced as an anti-hallucination and anti-confusion drug. Value not confirmed. Animal experiments indicate it may produce hepatitis and pancreatic lesions.

Benactyzine, 3B, (Suavitil-Merck) 1-3 mg. daily. Contraindicated in "hostile" patients. May produce concentration difficulty, depersonalization, paresthesias, muscle weakness, dizziness, tension, nausea, vomiting, dry mouth, diarrhea, ataxia, palpitation, apathy, indifference. Recently combined with meprobamate (Deprol-Wallace) as an antidepressant-rating : 3B.

Hydroxyzine, 2A (P), (Atarax-Roerig), 10 mg. t.i.d. Of questionable value except in very mild anxiety. No side effects yet reported.

Phenyltoloxamine, 2A (P), (PRN-Bristol), 25-50 mg. b.i.d. Boston Psychopathic Hospital study on normals : Useful in relieving muscular tension and has sedative effect without motor or intellectual impairment. No autonomic or visual side effects. (Perhaps this drug should be listed with the non-barbiturate sedative-hypnotics in Section IV.)

B. The Substituted Propanediol Group :

Meprobamate, 2B, (Miltown-Wallace ; Equanil-Wyeth), 200-400 mg. t.i.d. No convincing studies demonstrating the superiority of tranquilizers to barbiturates. Meprobamate medication associated with production of fever, malaise, nausea, vomiting, headache,

increased peristalsis, cardiac dysrhythmia, hypotension with shock, rashes, angioneurotic edema, purpura, itching, drowsiness, euphoria, restlessness, hypomanic conditions, diplopia and coma. Addiction and withdrawal syndromes reported. Potentiates alcohol, barbiturates and antihistamines.

Phenaglycodol, 2A, (Ultran-Lilly), 300 mg. t.i.d. Said to allay anxiety without dulling mental acuity or awareness. Further data needed.

C. Other :

Chlormethazone, P, (Trancopal-Winthrop), 100 mg. t.i.d. Primarily a muscular relaxant, with tranquilizing action. Further data needed.

III. Stimulants (Anti-Depressives) :

A. The Hydrazines :

Iproniazid, 2C, (Marsilid-Hoffman-La-Roche), 10-25 mg. t.i.d. (1-isonicotinyl 2-isopropyl hydrazine). Anti-depressive value varies : 30-90% improvement reported. Side effects : dizziness, ataxia, loss of muscular tonus, hypotension, accommodation disturbances, headache, dry mouth, flushing, sweating, euphoria, confusion, restlessness, depression. Edema, dyspnea, cardiac failure and neuralgic pain also reported. Acute yellow atrophy of the liver has been reported by several investigators—with a number of fatalities.

Phenelzine dihydrogen sulfate, P, (Nardil-Warner-Chilcott), 15 mg. t.i.d. (B-phenylethylhydrazine dihydrogen sulfate). Reported to be less toxic than iproniazid but as effectual in relieving endogenous depression. Hypotension, nausea, ankle edema, transient impotence and micturition reported.

B-phenylisopropylhydrazine HCl, P, (Catron-Lakeside, 12-3 mg. daily.³ All of the hydrazines inhibit monamine oxidase, thus protecting serotonin from being broken down. Catron reportedly inhibits brain MAO without affecting liver MAO and thus is safer than iproniazid, which affects liver MAO first. Side-effects : Hypotension, red-green visual defect, may be potentiating with other MAO inhibitors, may mask coronary insufficiency and overdose can produce liver damage.

To be released for sale soon.

Nialamide, P, (Niamid-Pfizer), P dose,

³Initial and maintenance dosages.

(N-isonicotinoyl-N'-B-[N-benzyl-carboxamido] ethyl hydrazine). Under investigation. Reportedly a potent antidepressant that is effective within a few days and is relatively free of adverse side effects. Not yet released.

B. The Amphetamines :

Dextroamphetamine, 2B, (Dexedrine-SKF), 2.5-10 mg. t.i.d. Side-effects : Anorexia, insomnia, palpitation, anxiety and feeling of being "driven." Non-toxic when used in therapeutic doses under medical supervision. Contraindicated in patients with cardiovascular disease.

Dextroamphetamine with amytal, 2A, (Dexamyl-SKF), dose : same as above (includes 30 mg. amobarbital per 5 mg. D-amphet.) D-amphetamine side effects minimum or absent if dose is properly adjusted. Effect is to allay anxiety, relieve depression and facilitate integrated functioning. Often neutralizes depersonalization phenomena.

Methamphetamine, 2B, (Desoxyn-Abbott), 2.5-5 mg. t.i.d. Effectuality and side effects lie between dexedrine and dexamyl.

C. Other Anti-Depressives :

Methylphenidate HCl, 2B, (Ritalin-Ciba), 5-10 mg. t.i.d. This drug and pipradol reportedly do not produce the unpleasant side effects of the amphetamines. Actually, they do. A shock-like condition may develop with tremor, sweating, tachycardia, headache, vertigo, motor restlessness.

Pipradol HCl, 2B, (Meratran-Merrill), 1-2.5 mg. t.i.d. May produce insomnia, nausea, skin rash. May aggravate existing anxiety and produce psychotic phenomena. Said to be contraindicated in patients with anxiety, hyper-excitability, paranoia, agitation and obsessive compulsive states. Some investigators report that the amphetamines are more effectual than either of these preparations.

Deanol, 3B, (Deaner-Riker), 25 mg. t.i.d. The few available reports find this drug useful in mild depression. The rating given reflects that impression at the N. Y. State Psychiatric Institute.

Imipramine, 1B, (Tofranil-Geigy), 25-75 mg. t.i.d. Beneficial in endogenous depressions. Use with neuroplegics in agitated depressions suggested. Most side effects occur in patients receiving more than 200 mg. daily. One-third of 84 patients (Lehmann) had side effects of the following types : Hypotension, seizures, tremors, diplopia, involuntary staring, visual hallucinations, agitation. Side effects more common in patients over 65. This drug is a monamine oxidase facilitator—in contrast to the hydrazines.

IV. Non-Barbiturate Sedatives and Hypnotics :

Methylparafynol, 2B, (Dormison-Schering), 250-500 mg. b.i.d.

Glutethemide, 1B, (Doriden-Ciba), 125-250 mg. t.i.d.; 500 mg. hs.

Ethchlorvynol, 2B, (Placidyl-Abbott), 250-500 mg. b.i.d.

Methpyrrolon, 2B, (Noludar-Hoffman, LaRoche), 50-200 mg. b.i.d.

Oxanamide, 3B, (Quiactin-Merrill) 800-1000 mg. daily.

Ethinamate, 2A, (Valmid-Lilly), 500 mg. p.r.n.

These drugs are recommended by their respective producers as being as effectual as the barbiturates but free of the possibility of habituation. In addition, there is said to be no hangover the morning after; e.g., drowsiness, haziness, and fatigue. There may be less of the latter in the case of some of them. None is as effectual hypnotically as secobarbital and amobarbital for sleep disturbances for which these are usually prescribed. Most of these newer preparations present the disadvantages of barbiturate daytime sedation : drowsiness and fatigue.⁴ Other side effects : Dormison : dizziness, mood lability, irritability, depression, distortion of time sense and body image, amnesia and vomiting. Doriden : drymouth, itching, dermatitis, nausea and, most important : increasing tolerance, addiction and severe withdrawal symptoms : abdominal pain, restlessness, panic and clonic spasms.

⁴Malitz, S. : J. Chronic Dis., 9 : 278, March 1959.

ISOCARBOXAZID (MARPLAN) IN AMBULATORY PSYCHIATRIC PATIENTS

HARRY F. DARLING, M.D.¹

The use of isocarboxazid in hospitalized patients has been previously described (2). This paper describes its use in 25 private ambulatory depressed patients and 5 schizophrenics. Three of the schizophrenics were mixed with affective components, and 2 were catatonics. Except in the case of 2 of the chronic brain syndromes the depressions were of relatively recent origin (3 to 15 months), and the remaining cases of depression were as recent. Initial dose for the depressed patients varied between 20 mg. and 60 mg. daily, and mean maintenance dose was 30 mg. daily. The schizophrenics were given 30 mg. daily for a week and only then increased to 60 mg. in an attempt to decrease the incidence of initial side effects; mean maintenance dose was 40 mg. daily. All cases were under treatment 3 or more months. Improvement is shown in the accompanying table.

One schizophrenic had been hospitalized 10 months in the psychiatric unit of a Veteran's Administration hospital and received group and individual psychotherapy—and nothing else. He was sent out of the hospital in the hope that he might adjust in society and with the recommendation that if he did not he should go to a chronic rehabilitation hospital. A personality change had been going on at least 7 years. After 2 weeks specific treatment his affective component cleared up and he began not only working but also occupying himself in home handicraft projects of a technical nature. His other schizophrenic features rapidly receded and he and his family feel he is as good as, if not better than, he was 7 years ago. The other schizophrenics had noted disturbing symptoms for one to 8 years. One catatonic improved markedly, another moderately. The unimproved schizophrenic was one with affective components.

The obsessive-compulsive patient was

particularly interesting in that the results confirmed the findings of Arnot (1) who noted improvement in all 5 cases of this disorder treated with hydrazines.

Side effects included 2 patients with hypotension, alleviated by a pressor agent, and one with hypotension and equilibrium disturbance who could not tolerate even 10 mg. daily. One case of edema was controllable by diuretics and the other was not; both were aged.

The drug began to act within 3 days to 4 weeks of treatment.

DISCUSSION

Nothing need be said about the depressed patient that has not already been said about hydrazine therapy, but regarding the schizophrenics there is now a total of 12 cases treated by the writer (2) and 8 by an associate (4), not including the vegetative group previously reported (2). Six of these cases improved markedly, 5 moderately and 3 minimally. Improved cases have been catatonics and mixed-affectives, more of the former. Even in relatively low doses iproniazid has been shown—in a very scientifically controlled and objective paper by Freymuth (3)—to improve 50% of chronic and regressed schizophrenics. In the confusing array of literature on neurohormones it has been shown by Sano (5) that chlorpromazine elevates serotonin, and it is possible that part at least of the effect of phenothiazines on the brain may be much more tangent to that of hydrazines than we realize. In the writer's opinion hydrazines are the treatment of choice in schizophrenics who have affective components, although by no means the first choice in catatonics, but should not be overlooked if other methods are not working well. In the writer's opinion high doses are indicated for optimum results and seem to be possible with isocarboxazid.

¹ Baldpate, Inc., Georgetown, Mass.

Diagnosis	IMPROVEMENT				
	No. Cases	Marked	Moderate	Minimal	None
Anxiety neurosis	10	4	3	1	2
Obsessive-compulsive	1	1	0	0	0
Involuntional	2	1	1	0	0
Dyssocial reaction	1	1	0	0	0
Depressed manic	3	3	0	0	0
Chronic brain syndrome	8	3	1	2	2
Schizophrenia	5	3	1	0	1
Total	30	16	6	3	5

SUMMARY

Isocarboxazid appears to be a very workable hydrazine derivative for treating ambulatory depressions, and is of use as well in certain cases of schizophrenia. Relatively high doses are possible with relatively few side effects. The isocarboxazid for this study was supplied by Roche Laboratories (trademark, Marplan).

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PROBLEMS IN EVALUATION OF R-1625

HERMAN C. B. DENBER, M.D., PAUL RAJOTTE, M.D., AND
DOROTHY KAUFFMAN, R.N.¹

Several continental investigators have reported unusually successful results in the treatment of acute and chronic psychotic patients with 1-(3-*p*-fluorobenzoylpropyl)-4-*p*-chlorophenyl-4-hydroxypiperidine (1-3).² The absence of a phenothiazine nucleus and its ability to produce extrapyramidal reactions in a large percentage of patients suggested the desirability of further trials.

Thirty acute and chronic female patients (ages 23-61) were studied under standard conditions (*i.e.*, daily observations; weekly team review; laboratory studies). They were hospitalized 10 days to 5½ years, and diagnosed for the most part as dementia

praecox; 3 were manic-depressive. Presenting symptoms extended from maniacal excitement to depression, while moderate to severe thought disorders were present.

The initial dose ranged from 1 to 10 mg. t.i.d. with 14 patients receiving between 1-3 mg. t.i.d. At the end of the study, 15 patients were receiving between 5 and 30 mg. t.i.d. The duration of treatment was: 1-19 days—9 patients; 20-59 days—11 patients; 80-100 days—5 patients; more than 100 days—5 patients. An extrapyramidal syndrome was the most frequently observed side effect (12 patients), was fairly incapacitating, requiring anti-Parkinson drugs. There were no abnormal changes in the white or red blood counts; bilirubin, cephalin flocculation or thymol turbidity tests. The total blood cholesterol was elevated in 2 patients. R-1625 had no blocking effect upon mescaline.

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² R-1625 was provided through the courtesy of Dr. Thomas H. Hayes, G. D. Searle & Company, Chicago, Ill.

The results were: much improved—4; improved—5; unchanged—21. Psychotic behavior in some patients was intensified with increased anxiety, restlessness and additional symptoms. Three of the 4 much improved patients were depressed and showed rapid disappearance of this affect between 27 days after medication was started. Acute psychomotor agitation was refractory even where the drug was given intramuscularly in high doses (5 patients).

DISCUSSION

Improvement in depressed patients on the research ward has at times been observed without any treatment other than the intensive social therapeutic program. For this reason, we cannot be absolutely certain that R-1625 was the effective agent. This is the first time a compound has been studied with the present group of patients which produces fairly severe extrapyramidal symptoms, and yet has relatively little therapeutic effectiveness.

Our inability to confirm the European results raises several interesting questions which cannot be definitely answered at present. It is necessary to compare (a) the patient population, (b) dose range, (c) criteria for improvement, and (d) the investigator's technique. The latter has been considered elsewhere(4). Items "a" and

"c" were approximately identical (personal observations), and our doses were in excess of those used by others(1-3). Finally, it was supposed that the product used was not identical to that furnished abroad(5).

The absence of any blocking action against mescaline supports previous comparative observations with other more effective drugs.

SUMMARY

It was not possible to influence the clinical picture in 21 of 30 acute and chronic female psychotic patients following treatment with R-1625.

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HEAT STROKE WITH MEPAZINE THERAPY

WALTER L. FORD, M.D.¹

The report by Mahrer, Bergman and Estren, "Atropine-Like Poisoning Due To Tranquilizing Agents," in the October 1958 issue of *The American Journal of Psychiatry*, seemed to indicate that further information regarding this subject should be published. During the summer of 1957 the VA Hospital, Waco, Texas, had as many as 150 patients on mepazine (Pacatal). A warm spell enveloped Waco with temperatures as high as 105 degrees F. During that period we had over 25 patients who were

receiving mepazine develop heat strokes. Some of the patients developed temperatures as high as 108 degrees F. In each case the role of mepazine, in rendering the patients susceptible to heat stroke, was recognized, as the pharmaceutical company distributing the drug warned in its literature about hyperthermia. In each patient the drug was discontinued immediately, and the usual treatment, that is, ice packs, etc. for heat stroke, was administered. There were no fatalities. We have had no similar experience with patients receiving other phenothiazine derivatives.

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IMPROVED TECHNIQUE FOR INDOKLON CONVULSIVE THERAPY

WILLIAM KARLINER, M.D., AND LOUIS PADULA, M.D.¹

Since we(1) introduced the use of Pentothal and Anectine for modification of Indoklon² inhalant convulsive therapy, certain technical problems have arisen. The following is a brief summary of our observations and a recommendation for improvement of this technique.

Esquibel and coworkers(2) used a modified Stephenson mask for Indoklon convulsive therapy. This method seemed satisfactory since the patient was not anesthetized. But if Pentothal and Anectine were used, patients were breathing only shallowly because they were under anesthesia. It took more time and a greater amount of the inhalant vapor to produce a convulsion with Indoklon. Furthermore, the protective effect of Anectine was gone in many instances at the time when the patient responded to the inhalation of Indoklon with a grand mal seizure.

To overcome this difficulty, we had the container holding the Indoklon attached on one side to the mask, and on the opposite side to a rubber bag which was connected

by a rubber tube to an oxygen tank. This enabled us to control the amount of oxygen which was mixed with the Indoklon vapor. By manual pressure on the rubber bag, it was possible also to force the Indoklon vapor into the patient's lungs while he was under Pentothal anesthesia.

This technique overcomes the apprehension experienced by some patients when receiving gas inhalation in any form. It insures the proper timing of the patient's convulsive response to the Indoklon-oxygen vapor mixture, thus enabling the patient to benefit from the softening effect of Anectine. It is important not to use too much oxygen because its use decreases the potency of Indoklon, delays the onset of the convulsion, and necessitates deeper anesthesia, larger amounts of Indoklon and the loss of benefit from Anectine. This method is safe and very simple, and its adoption for Indoklon convulsive therapy is recommended.

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A COMPARISON OF REST AND ECT IN THE TREATMENT OF SCHIZOPHRENICS

PETER D. KING, M.D.¹

The importance of evaluation of psychiatric treatments by careful measurement and comparison cannot be overemphasized. Early in my still brief psychiatric career I resolved, among other things, to attempt such evaluation. The result was several published and unpublished reports, one of which(1) showed significant worsening of hospitalized chronic schizophrenics 6 months following "regressive" electroshock (REST). These patients had been given

one or more series of ECT earlier in their hospitalization and some of them had received insulin coma therapy. The question remained to be answered if hospitalized chronic schizophrenics who had never had somatic treatment would benefit from either ECT or REST. A subsidiary question regarded the comparative efficacy of ECT and REST in both chronic and other schizophrenics. This paper offers an answer to each of these questions.

METHOD

Thirty-seven schizophrenic males were

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randomized into 2 groups: one group received ECT 3 times a week (ECT) and the other received it twice daily 6 days a week (REST). Both groups received a total of 20 treatments. Eighteen of the patients were chronic² schizophrenics who had never before had a series of ECT and 19 were subacute³ schizophrenics. The 18 chronic schizophrenics came from chronic wards in a "Kirkbride" type of building; they and the 19 subacute schizophrenics were all placed on the treatment ward of the building. Treatment was completed just prior to routine staff changes; this was done so that the new administering physicians would not know that a study was in progress. They became aware that treatment had been given and were responsible for the convalescence of the patients—typically seeking to release them or place them on the "better" wards. Because of this, I felt that ward "quality" and rate of release would be satisfactory

² Patients at Warren State Hospital, Warren, Pa. who had been hospitalized continuously for an average of 15 years.

³ 3 patients who had just been re-admitted after previous hospitalization, 4 recently admitted patients who had received somatic treatment on the acute treatment service and failed to recover, and 12 new patients who were admitted from prison.

measures of response to treatment. Evaluation was made 6 months after the last treatment.

RESULTS

REST produced marked confusion in all patients who received it, and resulted in one death (apparently from ventricular fibrillation, but autopsy permission was not granted). Six months following treatment there was no apparent difference between the two groups. Nine chronic schizophrenics fell in each group; none had been released from the hospital and all of them were on wards at the same level as those they had come from, or "worse." The only noticeable improvements were among the 18 surviving subacute patients: 2 in each group had recovered and been released, while 3 on ECT and 2 on REST had been given open ward privileges.

In summary, ECT and REST showed no significant difference in the treatment of schizophrenics, and neither was of any apparent benefit to chronic schizophrenics who had never before had either.

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METHYLNONYL DIOXOLANE: A CLINICAL TRIAL

CALVIN SCHORER, M.D., AND PAUL LOWINGER, M.D.¹

The dioxolanes are a group of substances related structurally to meprobamate, and pharmacologically to mephensin. One particular member of the group, 2-methyl, 2-nonyl-4 hydroxy methyl 1-1, 3-dioxolane, has been studied. Like the other dioxolanes, it appears to suppress excessive stimulation of spinal interneurons. Direct, or two-neuron, pathways are not affected, but more elaborate reflexes, such as the

flexor reflexes, are blocked. No effect on respiration or consciousness was reported in preliminary animal studies (1, 2, 3). Spasm, tremor, or other involuntary movements accompanying anxiety, therefore, seemed appropriate indications for a clinical trial of methylnonyl dioxolane, referred to as MND.

The study was made with a group of psychiatric outpatients characterized by obvious signs of anxiety, particularly in the motor sphere, i.e., tremor, muscular tension, or tics. They were first given a complete psychiatric examination and such other adjunctive examinations as seemed appropriate. This preliminary evaluation defined the patient's suitability for a drug clinic ac-

¹ From the Lafayette Clinic and Wayne State University College of Medicine, Detroit, Mich. This investigation is a part of a project supported by Public Health Service Research Grant MY-2241, National Institute of Mental Health. The National Drug Company, Philadelphia, furnished the 2-methyl, 2-nonyl-4 hydroxy methyl 1-1, 3-dioxolane (methylnonyl dioxolane).

conform to criteria outlined by Lowinger *et al.*(1).

Twenty-three patients took MND for a period ranging from 7 to 140 days; the mean duration of treatment was 45 days. The patients' ages varied from 19 to 66 years. Thirteen were female, 10 were male. Diagnostically, the patients showed a considerable variety, including 10 psychotics (7 schizophrenics, 1 manic-depressive, depressed), 2 motivational reactions, 10 psychoneurotics, 2 personality disorders, and 1 psychophysiological reaction.

The patients had MND prescribed orally in 750 to 1000 mgm. amounts daily in divided doses. Return appointments were given in one to 4 weeks. The physicians serving in the drug clinic recorded the patients' degree of anxiety, sleep disturbance, depression, thought disturbance, and the quality of interpersonal relationships. To heighten objectivity, each of these symptoms was graded from one to five on standardized rating sheets; this allowed us to establish a numerical description of relief from symptoms. A clinical progress note at the time of each return appointment gave a verbal account of symptoms, side effects and current reality events, and the dosage of the drug was modified according to the patient's response. When several weeks on high dosages had elapsed without benefit, or when ordinary dosages resulted in side effects or a demand for other medication, MND was discontinued.

Side effects appeared in 7 of the 23 patients. The most common side effect, nausea and vomiting, was also found in

earlier studies of a nearly identical diuretic, Glyketal(3). Irritability and bad dreams were the less common side effects attributed to MND. All 4 instances of nausea and vomiting, and 5 of the total of 7 side effects, occurred among schizophrenics.

The effectiveness of MND in each patient was determined by means of a review of the rating sheets and progress notes recorded at each clinic visit. The following results were obtained: little or no improvement, 5 patients; moderate improvement, 10; marked or complete relief, 8. Neurotics, followed by schizophrenics, were the diagnostic groups with highest relief scores. Anxiety was the symptom best relieved, and insomnia was second best.

In conclusion, this study shows definite relief of anxiety symptoms but with a high incidence of side effects, particularly in schizophrenic patients. Tremors and tensions are the symptoms best relieved; nausea and vomiting are the usual side effects. The drug appears worthy of clinical trial for selected patients.

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TREATMENT OF DRUG-INDUCED EXTRAPYRAMIDAL HYPERKINETIC REACTIONS WITH UK-738

(N-ETHYL-NORTROPINE-BENZHYDRYLETHER-HYDROBROMIDE)

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MARGARET R. GOLD, B.A.

Drug-induced hyperkinetic states, including restlessness and hyperactivity, hysteriform head-neck syndromes resembling spastic torticollis, and pseudo-Parkinsonian

reactions, are frequently seen accompanying treatment by psychotropic drugs, especially phenothiazines. They may decrease or disappear with maintenance or decrease of the dosage, but frequently persist on required medication levels.

Atropine and related substances, used in

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the treatment of extrapyramidal hyperkinetic reactions, have been largely replaced during the past decade by chemicals unrelated to naturally occurring Atropine, because of the complex action of Atropine, the primarily one effect, the control of rigidity and tremor, was desired.

We tested a new compound of the Atropine group,³ n-ethyl-nortropine-benzhydry-



l-ether-hydrobromide (UK-738)(1) as an anti-hyperkinetic agent. UK-738 does not contain tropic or any other acids, nor a free hydroxyl group. Different physiological reactions, therefore, could be expected.

In animal studies(2) the tolerable dosage range was smaller for UK-738 than for Atropine (Table 1). However, inhibition of pilocarpine-induced hypermotility (intestine in situ, cat) was 6 times weaker than that of Atropine; inhibition of salivation evoked by pilocarpine (rabbit) 10 times weaker; mydriasis-inducing effects (mouse) 14 times weaker. The central effects, like potentiation of the excitatory effect of amphetamine or potentiation of pentothal anesthesia were stronger with UK-738. In rats, cataleptic reactions produced by phenothiazines were inhibited by UK-738. UK-738 is an anticholinergic agent with strong central and weaker peripheral action.

The compound was used in 30 volunteer patients, for as long as 2 months. Twenty-four exhibited a pseudo-Parkinsonian reaction due to phenothiazines. Twenty-three of these showed a sufficient decrease of Parkinsonian symptomatology, usually within 48 hours, on dosages of 0.5 mg. b.i.d. to

2 mg. b.i.d., orally, despite continuation of phenothiazine therapy. Tremor and rigidity disappeared. Salivation decreased to appropriate levels, questioning elicited an occasional report of mainly nocturnal oral dryness. The Parkinsonian facies was replaced by normal facial expressions. A quicker response was obtained by subcutaneous injection of 0.5 to 1 mg. in those patients unable or unwilling to swallow. One patient experienced no relief but improved when UK-738 was replaced by Cogentin. Such a substitution was made in 7 additional patients. Six responded equally well, one failed to maintain the improvement achieved with UK-738. Upon withdrawal of Cogentin, after 3 weeks and under continued phenothiazine dosage, recognizable Parkinsonian features reestablished themselves soon in these 8 patients.

Five patients exhibiting marked drug-induced restlessness and one manifesting a hysteriform head-neck syndrome were treated similarly with UK-738. Improvement was always satisfactory, often occurring within 20 minutes. Small single dosages (0.5-1.0 mg.) provided beneficial effects lasting from 4 to 12 hours.

No undesirable side reactions, except for the occasional oral dryness mentioned, have been noted within the respiratory, cardiovascular and intestinal systems, on routine laboratory tests, and in the mental status examinations. The mydriatic effect was absent or mild. One patient on combined drug therapy and ECT required less Sodium Pentothal and less Anectine while on UK-738. Constipation accompanying phenothiazines was insufficiently affected by either UK-738 or Cogentin.

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TABLE I

LD-50 (IN MG./KG.) FOR UK-738 AND ATROPINE, I.V. AND P.O., IN DIFFERENT SPECIES (2).

	MOUSE		RAT		RABBIT	
	I.V.	P.O.	I.V.	P.O.	I.V.	P.O.
UK-738	14	66	18.5	1030	6.2	215
ATROPINE	78	670	110.0	1060	68.0	ca. 2500

³ The authors acknowledge financial assistance and the supply of UK-738 from Sandoz Pharmaceuticals.

HAIRY TONGUE IN PATIENTS RECEIVING PHENOTHIAZINES : PRELIMINARY REPORT

A. E. PAGANINI, M.D. AND M. ZLOTLOW, M.D.¹

In the voluminous literature concerning the side effects and complications of the phenothiazine derivatives, no report has appeared of the occurrence of hairy tongue in patients receiving these drugs.

At Pilgrim State Hospital, in September, 1957, a patient who was receiving chlorpromazine in doses of 1,200 mg. per day complained of severe dryness of the mouth. Experimentation revealed a hairy tongue. After discontinuance of therapy, the hairy tongue disappeared within 2 weeks. Subsequently, all patients complaining of excessive dryness of the mouth were watched for this development. In March of 1958, another patient complained of excessive dryness of the mouth while receiving chlorpromazine, 900 mg. per day and mepazine, 150 mg. per day, and again a classical hairy tongue was discovered.

Following this, a group of 896 patients were examined specifically for this finding. Nineteen more patients were found with a hairy tongue, giving a total of 20. All these patients were seen and the diagnosis confirmed by the consulting dermatologist.²

Of the 20 patients with this condition, 3 were on no drugs whatsoever, but the remaining 17 patients were receiving chlorpromazine and/or mepazine. The hairy tongue disappeared in 5 drug-treated patients after the discontinuance of therapy. The rest of the patients (12), are still receiving phenothiazine derivatives and to this date still retain the hairy tongue. All these patients have been receiving medication for at least 2 months, some for over one year.

As noted in the indiscriminate survey of patients, 3 cases of hairy tongue were discovered among those receiving no medication. Two of these patients, however, chew tobacco almost constantly. The other one was a heavy smoker and all 3 had poor oral hygiene.

Smears and cultures taken from all 20 patients have been confusing and contradictory. Most samples show a normal mouth flora with gram positive cocci predominating, but occasionally an indiscriminate specimen would show the presence of *B. coli*, *Candida Krusei* or *Candida Stellatoidea*.

Case Report.—A 54-year-old dentist was admitted October 15, 1957; his seventh admission to a psychiatric hospital. On admission, the patient was overactive, overtalkative, gesticulated wildly, and was obviously in increased psychomotor activity. He was diagnosed as manic-depressive psychosis, manic type as on all his previous admissions. He was placed on chlorpromazine, 200 mg. twice daily; he responded adequately and was released convalescent status December 24, 1957. However, the patient failed to continue his medication after release from the hospital and was readmitted December 30, 1957, again in an obviously manic state. The patient was again given chlorpromazine in doses of 300 mg. t.i.d., and on January 29, 1958 mepazine, 50 mg. t.i.d. was added. On this combination his manic symptoms abated. On March 25, 1958 the patient complained of excessive dryness of the mouth and a hairy tongue was found. The condition was confirmed by dermatological consultation. Despite this condition, the medication was continued until April 7, 1958 when the patient developed severe depression and psychomotor retardation. At this development the drugs were discontinued and within one week the hairy tongue disappeared.

COMMENTS AND SUMMARY

1. In an indiscriminate survey of 896 patients at Pilgrim State Hospital, 20 patients possessed a hairy tongue.

2. Three of these patients were on no drugs whatsoever.

3. Seventeen patients were on chlorpromazine or chlorpromazine and mepazine.

4. Five of these 17 patients lost their hairy tongue after discontinuance of medication.

It obviously cannot be stated definitely

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² Acknowledgment is expressed for the help and suggestions rendered by Abraham Zelony, M.D., Consultant in Dermatology, Pilgrim State Hospital.

that the phenothiazines cause hairy tongue. But, as noted above, the 5 patients whose medication was discontinued lost their hairy tongue within 2 weeks. The rest of the patients still retain their hairy tongue while receiving their medication. This seems to point the finger of suspicion toward the phenothiazines, especially in view of the well-established concept that other drugs, notably the antibiotics, have been found to cause this condition. The occurrence of the 3 cases of hairy tongue in patients receiving no medication also points

out the possibility of this being purely coincidental. In addition, there lurks in the background of all these patients the fact that most of those with hairy tongue possess poor oral hygiene and are heavy smokers or tobacco chewers.

Further studies of this problem are being carried out in an attempt to correlate all these findings. The observation is considered to be of interest and importance and is, therefore, reported in this preliminary study as a possible complication in the use of phenothiazine drugs.

CASE REPORTS

EMBOLIC CEREBRAL SEQUEL IN RHEUMATIC MITRAL STENOSIS PRECIPITATING SENILE MENTAL DETERIORATION

WALTER L. BRUETSCH, M.D., AND CLIFFORD L. WILLIAMS, M.D.¹

The incidence of late cerebral sequelae in patients with rheumatic valvular heart disease ranges between 3 and 5 per cent. Some of these patients require hospitalization in mental hospitals.

The fundamental lesions of these sequelae consist, most frequently, of a recurrent rheumatic obliterating arteritis, mainly of the small meningeal and cortical vessels, producing gross and microscopic softenings in the cortex (1, 2). Less often, there is an embolic mechanism of these vascular occlusions, developing in patients with advanced rheumatic mitral stenosis and auricular fibrillation (3).

Case Report.—The female patient, at age 69, began having repeated slight strokes, which were followed by mental symptoms. She used vile language, tried to set fire to the house, attacked relatives and friends, and ran away from home. At the same time, she became increasingly forgetful and confused, and developed epileptic seizures, which occurred every 3 to 4 months. Prior to her mental illness, she had been considered a well adjusted and sociable personality.

The patient had had measles, mumps, and whooping cough, but there was no history of rheumatic fever. (Rheumatic antecedents, such as rheumatic fever, acute arthritis, and chorea are found in the anamnesis of patients with rheumatic heart disease in only 50-70 per cent.)

When she arrived at Central State Hospital, she was considerably improved. There were no residual signs of the former strokes. She walked into the admission room with a friendly smile, saying that she had "leakage of the heart" for a long time and was worried because she could not think properly. She thought it was 1972 and revealed other gross memory defects.

Physical examination was essentially negative with the exception of the heart. The

precordium was active. A blowing systolic (grade 2) and a low pitched rumbling diastolic murmur were heard at the apex. The pulse was 90 and irregular. The blood pressure was 130/90, rising in the two succeeding years to 190/130.

Electrocardiographic study revealed atrial fibrillation. On X-ray examination the heart was enlarged and of a mitral configuration. The Wassermann reaction of the blood was negative. There were 4,800,000 red cells and 6,200 white cells, with a practically normal differential count. The urine contained the slightest possible trace of albumin and at times an occasional granular and hyaline cast.

The diagnosis was chronic brain syndrome, associated with circulatory disturbance, rheumatic cerebral embolism, with senile psychotic reaction, complicated by grand mal seizures. She died at the age of 74 of congestive heart failure.

Postmortem Observations.—In the dilated left auricle of the heart there was a large organized thrombotic mass, firmly attached to the wall which was partly calcified. The stenotic mitral valve had a roughened closing border, and the chordae tendineae were shortened.

In the brain was a large area of infarction in the region of the right island of Reil, extending into the upper temporal and lower central convolutions, but leaving the basal ganglia mostly intact (Fig. 1). A small infarcted area was also observed in the cortex of a frontal convolution. All cerebral arteries were entirely free of atherosclerosis. Microscopic examination detected an organized embolus in a branch of the middle cerebral artery going to the infarcted area.

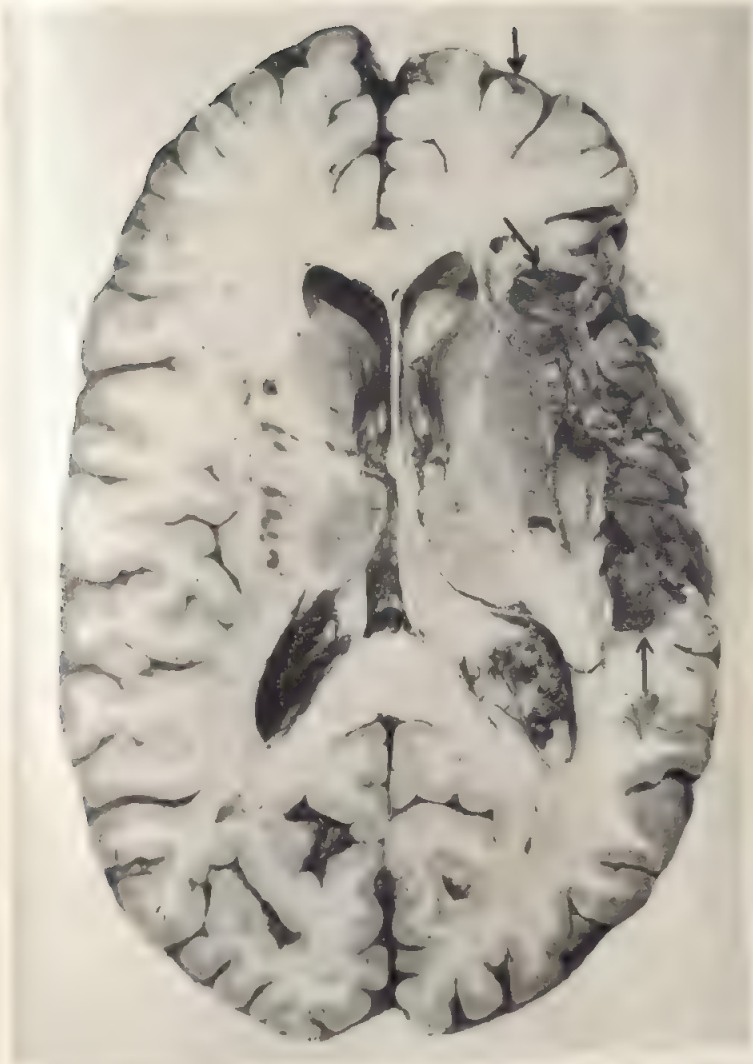
Embolic residuals were also present in the right kidney and in the spleen.

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FIGURE 1



BRAIN WITH LARGE INFARCTION IN THE REGION OF THE RIGHT ISLAND OF REIL, DUE TO A RHEUMATIC EMBOLUS, HAVING ORIGINATED FROM A WALL THROMBUS IN THE LEFT AURICLE OF THE HEART. THERE IS ALSO A SMALL INFARCTED AREA IN THE CORTEX OF ONE FRONTAL CONVOLUTION.

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SCHIZOPHRENIA ASSOCIATED WITH ADDISON'S DISEASE

HAROLD D. WOLFF, M.D., AND P. E. HUSTON, M.D.¹

Present Illness: An 18-year-old man was admitted November, 1957, in his first attack of mental illness with complaints of tension, irritability, and the belief that he was being doped. The illness had developed gradually over 5 months without known precipitating events.

The mental status revealed psychomotor retardation, inappropriate smiling, poverty of thought. His content centered about lights outside the hospital being related to sputnik and that the physicians were poisoning him with tablets. There were no hallucinations. He was oriented as to place, knew the year and month, but not the date. He carried 5 digits forward and 3 backwards, replied to arithmetic problems, being frequently careless and wrong. His understanding of absurdities was satisfactory, but he could not interpret proverbs correctly, giving up easily.

The physical examination, routine laboratory work, skull and chest X-rays were normal. The EEG was slightly slow in the anterior and temporal lobes bilaterally with 4 to 6 per second theta low voltage in the waking state. No abnormality appeared in sleep or with hyperventilation.

Family History: The father had had arteriosclerotic brain disease for 5 years and caused difficulty in the home because of irritability and excessive demands. The mother was a self-deprecating woman who relied upon her children for emotional support. Two sisters were making "good adjustments." However, a 20-year-old brother had had an attack of acute undifferentiated schizophrenia in 1956 which responded well to ECT. He remains well.

Past Personal History: The early years were not remarkable, but starting in the eighth year the patient had spells of nausea, vomiting, abdominal pain, and ex-

treme weakness accompanied by "yellowing" of his skin. These spells lasted 2 to 7 days with spontaneous remission. He received no medical treatment.

The previous personality was that of a shy, but not schizoid, easygoing boy who had two close boyfriends with whom he hunted, fished, and participated in sports. He did not date during high school, but otherwise the psychosexual development was normal.

Admission Impression: Schizophrenia, undifferentiated, acute.

Course in the Hospital: Because of gradual improvement it was decided to treat the patient with supportive psychotherapy. However, after 7 days he began to grime, maintained postures for hours if left alone, and was mute. This behavior was sometimes interrupted by outbursts of combativeness and destructiveness.

Electroshock treatments were started. After 16 treatments there was marked improvement with only residuals of slight affective blunting and mild anxiety. Thorazine was prescribed in the range of 75 to 225 mgm., and after 23 days he developed swelling of the hands, wrists, and oropharynx. The drug was immediately discontinued and the swelling gradually subsided. However, 8 days after the onset of the swelling, bronzing of the skin was noted. In 5 more days he complained of abdominal pain and developed nausea, vomiting, and hypotension. The serum Na was 123, K 6.9, and Cl 88.0 (Meq/L). The 17-ketosteroid excretion was 2.5 mgm./Gm. Creatinine. These findings were consistent with hypoadrenalism. The zinc turbidity, thymol turbidity, and serum bilirubin values were normal.

As the signs and symptoms of Addison's disease progressed, the patient became withdrawn, more tense, demonstrated blocking and ambivalence. However, he

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had no delusions and the sensorium remained clear.

Because the blood pressure declined to 70/40 mm. of Hg., cortisone was started. Within 24 hours the hypotension, vomiting, and abdominal pain had disappeared. Within 48 hours there were no signs of withdrawal, tension, blocking, or ambivalence.

The patient was stabilized on 25 mgm. of cortisone per day. In order to rule out secondary adrenal insufficiency, cortisone was gradually discontinued and 100 units of Acthar-Gel per day were given. During the cortisone withdrawal the patient became progressively tense, withdrawn, and ambivalent, but not delusional. At this time the 17-ketosteroid excretion on 3 consecutive days was abnormally low with values of 3.1, 3.9, and 3.1 mgm. of 17-ketosteroid/Gm. Creatinine respectively. This was interpreted to indicate a primary adrenal insufficiency. His physical state was normal except for a bronzed skin. The serum Na was 138, K 4.8, Cl 108, all within the normal range. The fasting blood sugar was 98 mgm.%. The EEG became normal, and psychological studies for brain damage were within normal limits. During this period the patient was off cortisone for 5 days. Cortisone was restarted without any mental improvement after 9 days. Then DOCA, 1 mgm. per day for 3 days and 0.5 mgm. per day for 2 days, was added. Within this 5 day period his mental state became normal. The DOCA was discontinued because of edema, and the patient was finally stabilized on 12.5 mgm. per day of cortisone, which maintained improvement. At the time of discharge 20 days later, the patient's mental and physical performances were normal.

Follow-up: Examination one year after discharge revealed no signs nor symptoms of Addison's disease or schizophrenia. The patient has taken 12.5 mgm. of cortisone daily.

The patient's brother, who had had an attack of acute undifferentiated schizophrenia, underwent extensive laboratory testing in order to detect adrenal insufficiency. These tests were normal.

DISCUSSION

There have been several reports of psy-

chotic behavior accompanying Addison's disease, the psychoses in these reports being called "paranoid psychosis," "Addisonian psychosis," "confusional psychosis," "depression," "paranoid schizophrenia" (1, 2, 3). At the time of admission of our patient no one questioned the diagnosis of a schizophrenic reaction. It was only after Addison's disease appeared that we wondered whether this patient had two unrelated illnesses, or whether the schizophrenic reaction was either caused or "triggered" by the recognized metabolic disorder. Arguments consistent with either of these possibilities can be advanced.

The fact remains, however, that the institution of hormonal therapy was closely followed by a remission of the classical signs of schizophrenia. This is strong evidence of a causal relationship of Addison's disease and the mental reaction. On the other hand, we cannot readily explain why there was not prompt improvement after the second introduction of Cortisone nor why he improved mentally the second time only after DOCA was begun.

It is possible that since the age of 8 this patient has had recurrent bouts of adrenal insufficiency (4). If one postulates that this patient's adrenal "reserve" has been low for years, why did not the course of ECT precipitate an acute adrenal insufficiency syndrome? It has been urged on the basis of animal work that ECT is a severe stress (5). Two reports describe the use of ECT in the treatment of psychoses associated with Addison's disease (2, 3). In both of these instances electrotherapy was given while the patient was receiving hormonal therapy. Nevertheless, Craddock and Zeller (2) doubt that ECT represents an acute physiological stress.

SUMMARY

A patient is presented who showed an acute schizophrenic reaction. Treated with ECT, there was marked improvement. Four weeks later the schizophrenic symptoms returned accompanied by signs and symptoms of Addison's disease. Treated with hormones, there was a remission of both the Addison's disease and the mental symptoms.

After one year of maintenance on cortisone the patient is without evidence of improvement on Addison's disease.

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COMMENT

INTERDISCIPLINARY TRENDS IN MENTAL HYGIENE RESEARCH AND TRAINING

(FEDERALLY SPONSORED PROGRAMS)

From the point-of-view of financial support, the research and fellowship programs established in the mental health field are largely dominated by the National Institute of Mental Health, and a large share of the progress made in the past decade has been

the result of this federal subsidy. Future trends will be, hopefully, determined by honest and careful appraisals of the past record. The data which follow are a contribution to such an appraisal.

TABLE 1

RESEARCH PROJECTS

Following is a classification of 247 research grant proposals receiving U. S. Public Health Service support in December 1958. The categories were selected on the basis of the research *methods* which were outlined in the proposals.

<i>Classification of Projects</i>	<i>Number</i>	<i>% of Total</i>
1. Psychological testing	77	31%
2. Pharmacology	39	16%
3. Animal studies	25	10%
4. Studies of metabolism	13	5%
5. Psychopathology	12	5%
6. Physiology of mentally retarded	9	4%
7. Surveys of public opinions	9	4%
8. Studies of patients' families	8	3%
9. Training of mentally retarded	7	3%
10. Follow-up studies of patients	7	3%
11. Psychotherapy	7	3%
12. Sociological (community) studies	6	2%
13. Psychosomatic studies	6	2%
14. Population surveys	5	2%
15. Electroencephalography	5	2%
16. Studies of juvenile delinquents	3	1%
17. Studies of the sensorium	1	(-1)
18. Electric Shock	1	(-1)
19. Industrial problems, psychiatric	1	(-1)
20. Personnel training	1	(-1)
21. Unclassified	4	2%
TOTAL	247	100%

TABLE 2

PRINCIPAL INVESTIGATORS

Following is a break-down of the professional specialties listed as the "principal investigators" in the research projects of Table I.

<i>Professional Specialty</i>	<i>Number</i>	<i>% of Total</i>
1. Psychologists	130	53%
2. Psychiatrists	57	23%
3. Social workers	13	5%
4. Anthropologists	6	2%
5. Biochemists	6	2%
6. Educators	4	1%
7. Pharmacologists	4	1%
8. Biologists	4	1%
9. Internists	3	1%
10. Physiologists	3	1%
11. Neurologists	2	(-1)
12. Anatomists	1	(-1)
13. Pediatricians	1	(-1)
14. Obstetricians	1	(-1)
15. Osteopaths	1	(-1)
16. Combinations	11	4%
TOTAL	247	100%

TABLE 3

FELLOWSHIP PROGRAM

Following is a list of numbers of fellowships awarded by the National Institute of Mental Health between 1952 and 1959, classified according to the department to which fellows were assigned.

<i>Department</i>	<i>1952</i>	<i>1953</i>	<i>1954</i>	<i>1955</i>	<i>1956</i>	<i>1957</i>	<i>1958</i>	<i>Totals</i>
Psychology	21	19	12	15	40	69	102	278
Psychiatry	4	5	8	10	15	15	18	75
Sociology	6	3	4	2	5	12	11	43
Physiology	5	4	0	0	3	5	8	25
Medicine	2	5	3	3	2	2	7	24
Biology	3	3	1	1	1	6	13	28
Pharmacology	2	1	1	1	1	1	3	10
Anatomy	4	5	1	2	1	3	2	19
Public Health	2	1	0	2	1	3	2	11
Chemistry	1	1	0	0	0	9	9	20
Neurology	4	3	4	1	1	3	2	18
Anthropology	0	0	0	2	2	0	1	5
Others	0	0	0	1	3	28	6	38

TABLE 4

FELLOWSHIPS (N.I.H. : N.I.M.H. RATIOS)

The following shows the number of fellowships awarded in mental health as compared with the total numbers of fellowships awarded by the National Institutes of Health.

Year	Total N.I.H.	Total N.I.M.H.	<i>r</i>
1952	540	74	.14
1953	543	63	.11
1954	490	42	.08
1955	1042	48	.04
1956	1407	87	.06
1957	2153	185	.09
1958	1272	187	.16

Charles E. Goshen, M.D.,
Washington, D. C.

OFFICIAL REPORTS

REPORT OF COORDINATING CHAIRMAN, COMMITTEES ON THE TECHNICAL ASPECTS OF PSYCHIATRY

I shall not be able to give detailed information with reference to the activities of 9 standing and one Ad Hoc Committee assigned to me to coordinate. All of these committees met last fall in Washington, and 9 are scheduled to meet in Philadelphia this week; the tenth one met a few weeks ago. The majority of the committees have sponsored Round Table Programs at the Annual Meeting in 1958, and are giving similar programs during this week. Many of the committees have been collaborating with Dr. Daniel Blain and The Manpower Project. As in the past, the committee members have done much work by correspondence between the semi-annual meetings.

The Ad Hoc Committee on Education in Public Hospitals. Bernard Bandler, Chairman. The committee is working on the preparation of the brochure on the data that was collected in respect to the various patterns of education in public hospitals and the practices and techniques that have been helpful to them. Considerable data have been collected on the actual experiences of public hospitals in respect to the recruitment and utilization of psychiatrists from universities and private practice for staff training. It is hoped that the brochure will be completed within the next year.

Committee on Aging. Ewald Busse, Chairman, reports that a major portion of the Eleventh Mental Hospital Institute will be devoted to the problems of the aged. The Summer Institute in Social Gerontology sponsored by the Inter-University Council and supported by a grant from the National Institute of Mental Health has revised its fellowship policies to include psychiatrists, psychiatric nurses, and psychiatric social workers. This has been largely the result of this committee's efforts, and fellows have been chosen from the mental health professions. The grant application submitted by this committee to the NIMH entitled "Program Development

for the Psychiatric Care of the Aged" was not approved by the National Advisory Mental Health Council. This is in some respects unfortunate, but it will permit this committee to devote more of its efforts towards being an effective force in the coming White House Conference on Aging. Since there are a number of regional meetings planned to precede the White House Conference, as well as other preliminary meetings, it would appear to be important that the various district branches of the American Psychiatric Association be alerted to this development and the local committees urged to participate whenever possible.

Committee on Child Psychiatry. J. Franklin Robinson, Chairman, working in conjunction with the Committee on Medical Education, was able last fall, to secure the approval, "in principle" of a set of standards for training in child psychiatry. The standards called for 2 years of satisfactory training in child psychiatry which was to follow 2 years of satisfactory training in adult psychiatry. The training in child psychiatry was to be carried out under the direction of a qualified child psychiatrist in a qualified psychiatric facility. A child psychiatric service will include the appropriate allied professions.

Committee on History. J. Sanbourne Bockoven, has concerned itself with the following activities: 1. The preparation of a proposal for a research project to study the Historical Developments of Contemporary American Psychiatry; 2. Search for new outlets for publication of papers on History of Psychiatry; 3. The establishment of a Union Catalogue of publications of historical value. (As a first step in this direction, a bibliography of the writings of the Founding Fathers was compiled.) The Committee made the following recommendations, which were approved by Council in November, 1958: 1. That a Library illustrating the history of psychiatry be located and developed in the Founder's Room at

APA headquarters; 2. That the archives of the association be assembled and placed in APA headquarters, and 3. That the Medical Director be authorized to initiate a research project on the historical development of contemporary American Psychiatry. In addition, the Committee is investigating various approaches to study and prepare the *History on Contemporary Psychiatry*. It is seeking acquisition of books for the library. With the collaboration of Mrs. Vosburgh, the Committee has initiated an historical column in *Mental Hospital*.

Committee on Medical Education, George C. Ham, has been reviewing the two Ithaca Conference Volumes, preparatory to a decision regarding future conferences of this type, or special revisions and editions, or republications of these books. The Chairman has conferred with Central Office Staff regarding the republishing of the Directory on Residential Training Programs. The Chairman has contributed to the APA Survey of Medical Education in Alabama and in British Columbia. The Committee has sponsored a Teaching Institute at McGill University in October, 1958, and is planning future Institutes.

Committee on Mental Deficiency, Howard V. Bair, Chairman, has taken steps to establish liaison with the American Association of Mental Deficiency. It is working on a model state plan for complete community services for the care and treatment of mental defectives. It has undertaken a somewhat comprehensive review of new research in the field of mental deficiency. A conference was held with Dr. Charles Bush regarding Joint Accreditation for Institutions for the Mental Deficient. The Committee, together with the Committee on Mental Hospitals, requested Council to stress the advisability of psychiatric leadership in hospitals for the mentally ill and mentally defective; the Council reaffirmed its previous decision with reference to such psychiatric administration. The Chairman has been appointed as the official APA representative to the First International Medical Conference on Mental Retardation to be held in Portland, Maine, in July of 1959.

Committee on Public Health, John J.

Blasko, Chairman, reports the following activities: 1. State Surveys: The Committee continues to assist the APA Headquarters Staff in a Consultant Capacity. New Hampshire, Alabama and British Columbia were involved during the past year. The Committee is exploring ways and means of determining the effectiveness of past surveys. 2. Mental health teaching in schools of public health. A member of the Committee has made a study of this subject. A National Conference on Mental Health Teaching in Schools of Public Health is being organized for December 1959, and will be financed by the National Institute of Mental Health. The Committee has been asked about its activities in this area. 3. The public health psychiatrist: A study is being conducted by the Committee to determine what training is necessary in order to be considered as a public health psychiatrist. 4. Layman's Guide to a Community Health Study. Your Committee will review this guide when it is developed by the American Public Health Association Task Force. Several members of the APA Public Health Committee are on this task force. 5. Psychiatric care in nursing homes. The Committee believes that the Licensure requirements for nursing homes should include adequate psychiatric services. Further study of this important problem must await developments in the Ad Hoc Committee on District Branch Committees.

Committee on Rehabilitation, Benjamin Simon, Chairman. Among the Committee's activities during the past year have been the following: 1. Publication of AAAS Symposium on "Rehabilitation" under the editorship of Dr. Milton S. Greenblatt and Dr. Benjamin Simon (now in press); 2. (By invitation of Editors of *Progress in Psychotherapy*) a chapter in Volume IV by Dr. Simon on "New Trends in Rehabilitation" (in press); 3. (By invitation of Committee on Rehabilitation of the American Medical Association) a chapter by Dr. Simon on "Psychiatric Rehabilitation" (which is to be part of a series in the *Journal of the A.M.A.*); 4. Completion of work by Dr. Simon on "Volunteer Services to Psychiatric Patients" (to be published by the APA); 5. Continuing activity of

Interdisciplinary Study Group (Dr. Carmichael representing the Committee on Rehabilitation); 6. Election of Dr. Simon as Chairman of the A.M.A.'s Advisory Committee on Occupational Therapy Education to the Council on Medical Education and Hospitals; 7. Appointment of Chairman as Advisor on Rehabilitation to the Survey of Mental Health Resources of the State of Alabama; 8. Appointment of Chairman as Advisor on Rehabilitation to the Survey of Mental Health Resources of the Province of British Columbia; 9. Continuing representation of APA by chairman as a member of: (a) Executive Committee of the Advisory Committee on Physical Therapy Education of the Council on Medical Education in Hospitals of the A.M.A.; (b) Advisory Board of the American Registry of Physical Therapists; (c) Advisory Council of the American Occupational Therapy Association.

Committee on Research. Milton Greenblatt reports that the main activity of the Committee on Research is reflected in the Adolf Meyer Lectures, Regional Research Conferences, and APA participation in the annual AAAS meetings. Dr. W. Mayer-Gross of Birmingham, England, speaking on "Model Psychoses" gave the second Adolf Meyer Memorial Lecture. Dr. W. Grey Walter, of Bristol, England, is scheduled to deliver the 1959 lecture; Dr. Aubrey Lewis, of Maudsley Hospital, London, has agreed to give the 1960 lecture. Manuscripts derived from the Columbus, Ohio, Regional Research Conference were published in "Social Aspects of Psychiatry" No. 10 in the Psychiatric Research Reports. Publication is also planned for the Montreal and Oklahoma City Conference material. The University of Arkansas sponsored a Research Conference in February, dealing with psychiatric research by medical students and residents and a number of other conferences for 1959 are in the planning stage in such areas as Salt Lake City, Los An-

geles, Chicago and Cleveland. A highly successful "Symposium on Hallucinations" under the leadership of Dr. Louis Jolyon West was held at the December, 1958 AAAS meeting in Washington, D. C. Publication is expected soon of "Rehabilitation of the Mentally Ill; Social and Economic Aspects" presented at the 1957 meeting. Commitments have been made with AAAS to participate in their 1959 and 1960 meetings. Dr. Pasamanick and Dr. Bliss of the Committee are participating in the APA Surveys of Mental Health Needs and Resources of Alabama and British Columbia.

Committee on Therapy: Henriette Klein, Chairman, has revised the Standards for Electro-Convulsive Therapy, and is submitting the most recent revision to the Council during this meeting. Requests have been made that the Committee prepare a statement on the use of Hypnosis. The Committee feels that if such a statement be prepared it should be done in collaboration with the Research Committee and the Committee on Public Information. The Committee has undertaken two specific activities: 1. The writing of a Primer of Psychiatric Therapies and their Place in Psychiatric Practice (for internes and general practitioners), and 2. A study of the current status of Psychotherapy of Hospitalized Schizophrenics. A questionnaire has been prepared and is being revised at the April, 1959, meeting.

In conclusion I wish to emphasize the conscientiousness, zeal and enthusiasm which the members of the various committees have demonstrated during this last year. I wish to express my appreciation for their splendid cooperation and also for the outstanding cooperation of the officers and the members of the APA Staff in both the New York and Washington Offices.

Frank J. Curran, M.D.,
Chairman

NEWS AND NOTES

DR. EMIL A. GUTHEIL.—Dr. Stanley Lesse, Secretary for the Association for the Advancement of Psychotherapy, reports that the death of Dr. Gutheil, at the age of 60, occurred July 7, 1959. Dr. Gutheil was graduated from the University of Vienna Medical School and became a pupil and assistant of Wilhelm Stekel, whose works he translated into English and edited his autobiography.

He came to New York City in 1937 and with colleagues founded the Association for the Advancement of Psychotherapy in 1939. The Association embraces all schools and has 411 members. Dr. Gutheil also founded the American Journal for Psychotherapy. Among his publications are *The Language of the Dream* (1939) and *Handbook of Dream Analysis* (1959).

ALBERT EINSTEIN MEDICAL CENTER (PHILADELPHIA).—A \$211,000 Federal grant from the National Institute of Mental Health to support an expanding teaching program for Fellows in psychiatry during the next 5 years has been awarded to Albert Einstein Medical Center. The award marks the increasing Federal recognition of the growing importance of selected general hospitals in training of psychiatrists and treating mental patients.

To be eligible for a Fellowship, a doctor must have completed at least his first year of psychiatric residency and training in basic psychiatry including descriptive psychiatry, psychopathology, genetics, history taking, case reporting, principles of therapy and practice of psychological testing, and social work.

RESEARCH TRAINING IN PSYCHIATRY.—The Graduate Educational Program of the State University of New York Downstate Medical Center offers a 2-year program of research training in psychiatry leading to the degree of Doctor of Medical Science. The program is open to M.D.'s who have completed 3 years of residency training in psychiatry. Candidates will also be accepted after 2 years of residency training, when the final

year of residency will be taken at the psychiatric division of Kings County Hospital, concurrently with this program.

A broad interdisciplinary faculty is responsible for teaching courses and for supervising research of candidates. Each candidate who is accepted will be granted a fellowship of \$7,500 for the first and \$8,000 for the second post-residency year. Three-year candidates will also receive \$7,100 for the final residency year. Applications for the academic year beginning September 1960 should be submitted before January 1, 1960. For further information write to Office of Admissions, Downstate Medical Center, 450 Clarkson Ave., Brooklyn 3, N. Y.

THE LANGLEY PORTER NEUROPSYCHIATRIC INSTITUTE.—This San Francisco facility opened a 4-story annex in July, 1959. This million dollar structure, financed by the State of California and a \$150,000 Health Research Facilities grant from the U. S. Public Health Service, provides for expanded programs in psychiatric training and research. The first and second floors contain a new medical library, enlarged neuropathologic laboratories, conference rooms and service quarters. The third floor, devoted entirely to mental health research, has laboratories for biochemistry, physiology, and pharmacology, and quarters for the study of animal behavior as well as for research with human subjects. On the fourth floor a 12-bed neuropsychiatric unit gives the departments of psychiatry, neurology and neurosurgery facilities for cooperative research, and a 14-bed unit, for research in primarily psychiatric fields. The total bed capacity of the Institute is thus increased to 118. Formal dedication ceremonies will be held within the year.

EASTERN PSYCHIATRIC RESEARCH ASSOC., INC.—The fourth annual meeting of the Association will be held Friday and Saturday, October 23 and 24, 1959, at the Waldorf-Astoria Hotel, New York City. Morning and afternoon sessions will be held on

both days. A considerable range of new work will be reported.

On Friday afternoon there will be a panel discussion on "Neuropsychiatric Aspects of Space Medicine."

For further information address the Association at 40 Fifth Ave., New York, N. Y.

NORTH SHORE HOSPITAL LECTURES.—The opening lecture of the tenth annual lecture series on "Office Management of Emotional Disorders" will be held at the North Shore Hospital, 225 Sheridan Rd., Winnetka, Ill., Wednesday, October 7 at 8:00 p.m. Speaker: Dr. John I. Nurnberger. Topic: Diagnostic Signs and Symptoms of Emotional Disorders.

These lectures are approved by the American Academy of General Practice for post-graduate credit. For further information write to Samuel Liebman, M.D., Medical Director, North Shore Hospital, 225 Sheridan Rd., Winnetka, Ill.

CEREBRAL PALSY RESEARCH AND TRAINING GRANTS.—The United Cerebral Palsy Research and Education Foundation has funds available for grants for research and training, post doctoral fellowships in brain research, clinical fellowships in cerebral palsy including medical student fellowships. The next deadline for submission of application is March 15, 1960. For information address the: Director of Research, United Cerebral Palsy Research and Education Foundation, 321 West 44th Street, New York 36, New York.

DR. KANNER VISITING PROFESSOR UNIVERSITY OF MINNESOTA.—Dr. Leo Kanner who, in June 1959, retired as Professor and head of the Department of Child Psychiatry at the Johns Hopkins University School of Medicine, will spend the academic year, September 1959 to June 1960, at the Medical School of the University of Minnesota in the capacity of "distinguished visiting professor."

Dr. Kanner will be concerned with both under- and post-graduate training programs, occupying the position of Dr. Reynold Jensen, Director of the Division of

Child Psychiatry, who will be spending a sabbatical year in Europe.

OFFICE OF MENTAL RETARDATION, NEW YORK STATE.—The organization of this special office in the New York State Department of Mental Hygiene has been announced by Commissioner Paul H. Hoch, with the purpose of coordinating and developing all services for the mentally retarded under the department.

The state's six institutions for the mentally defective will be visited regularly and primary emphasis will be on improving care of patients, improving training programs, and facilitating placement of suitable patients in the community.

Dr. Arthur W. Pense, Deputy Commissioner, will be in charge of the new office at Albany.

REISS-DAVIS CLINIC FOR CHILD GUIDANCE.—The clinic will hold its Sixth Annual Institute of Child Psychiatry on November 7, 1959, at the Beverly Hilton Hotel. This meeting is offered to pediatricians and general practitioners in the Southern California area. Program this year will emphasize clinical case presentations. Further information can be obtained by writing to the Reiss-Davis Clinic for Child Guidance, 715 North Fairfax Avenue, Los Angeles 46, Calif.

DR. FREEMAN HONORED.—Word has been received that the Royal Medico-Psychological Association of Great Britain has recently elected Dr. Walter Freeman of Los Altos, California, to corresponding membership.

LEGAL ENVIRONMENT OF MEDICAL SCIENCE.—A report on the National Conference on the Legal Environment of Medical Science sponsored by the National Society for Medical Research at the University of Chicago, May 27-28, 1959, has been issued as a separate booklet.

The conference was divided into three sections: Section I includes a contribution dealing with the anatomical law, authorization for autopsies, the willing of bodies, etc.

Section II deals with animal experimentation, the responsibility of both suppliers

multiplicity of etiological agents there is a monotony of lesional mechanism and tissular reaction. Subsequently are considered treatment of cerebrovascular accidents, epilepsies, neurosyphilis, encephalitides, neurological syndromes with extrapyramidal dominance, multiple sclerosis and allied states, myopathies and myotonia, cerebro-spinal traumatism, neuralgias and peripheral nerve disorders, migraine and vertigos, meningitides, neurological aspects of alcoholics, barbiturate intoxication and finally disorders of sleep.

All the above subjects are presented in a systematic, finely classified way in the best French clinical tradition. There is a concise historical consideration of each topic, followed by clinical and etio-pathogenic classifications and descriptions of therapeutic measures accordingly.

Actual case material is presented succinctly. The sections on neurosyphilis, syndromes with extrapyramidal predominance, neuralgias and neurological problems of alcoholism are particularly well presented.

The neurological section ends appropriately in a discussion of disorders of sleep, and a general introduction to psychiatric treatment. The authors' point of view in this connection is explicitly "eclectic" including organic as well as psychodynamic considerations. The latter is evident in the authors' dealing with neuroses, where they briefly outline different psychotherapeutic approaches. The psychiatric section is divided into 14 chapters dealing with different therapeutic regimens applicable to different psychiatric syndromes, which are categorized in conformity with the present French classification. Somatic treatment of psychoses is extensively discussed: shock therapies, recent pharmacotherapies and sleep treatment. Unfortunately the discussion of the psychotherapy of psychoses is quite brief. The book ends with 2 long chapters on electro-radiotherapies of neurological disorders, which involve the use of different currents, i.e. faradic, galvanic, infra-red, ultra-violet, Roentgen and radio-active waves.

As a whole the book's excellence remains in the neurological section and in those aspects of psychiatric treatment with the predominance of somatic considerations. However, the meager attempt at psychological and psychodynamic formulations does not detract from the exceedingly detailed and clear way of this excellently organized book, which as a comprehensive text book of neuro-psychiatric treatment is unique.

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EGO STRUCTURE IN PARANOID SCHIZOPHRENIA.

By *Luise J. Zucker, Ph.D.* (Springfield, Ill.: Charles C Thomas, 1958. \$5.50.)

Sixty paranoid schizophrenic patients were studied by use of Rorschach protocols, the Mosaic Test and Figure Drawings. The group was equally divided by sex. Half of the patients were ambulatory and the other half hospitalized. The following categories of response were scrutinized: contaminated responses, fluid contours, extension of the ego-field into other fields, sensitivity to external stimulus and disturbed body image.

Significant differences were found between ambulatory and hospitalized schizophrenics. The ambulatory schizophrenic displayed more conspicuous deviations in the area of bizarre, arbitrary and autistic thinking, especially in the sexual sphere, whereas the hospitalized schizophrenic showed more collapse of ego boundaries and practically no sexual responses. The ambulatory patient had a variety of defenses which appeared to fulfill adjustment needs. The hospitalized patient had a lack of defenses and paucity of phantasy life.

The study has practical implications in that it gives insight into the diagnosis of schizophrenia, makes distinctions between its benign and malignant forms and gives clues about the prognosis with psychotherapy. Provocative questions are raised in regard to therapeutic objectives and results. For example, it is postulated that phantasy is indicative of inner resources and represents a valuable defense which may be disturbed by psychotherapy and lead to further personality disruptions because of the patient's incapacity to deal with environmental events and interpersonal relationships.

This monograph is a valuable contribution to our knowledge of the fluidity of ego boundaries and the understanding of the psychopathology of different groups of paranoid schizophrenics. It is worth the attention of psychiatrists and psychologists interested in the theoretical and clinical aspects of the nature of schizophrenia.

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A PSYCHIATRIST SPEAKS. Dr. C. Charles Burlingame. (Limited edition, privately printed for Mrs. C. Charles Burlingame by Connecticut Printers, Inc., 1959.)

This collection of representative selections from the writings and addresses of Dr. Burlingame-Burley to all his friends—may be regarded as the psychiatric will and testament of

one of the most advanced thinkers, planners and doers of our time in the field of mental health and illness. It was undertaken by Mrs. Burlingame only after she had received numerous requests from medical historians and colleagues for an authoritative statement of her husband's achievements and of the scientific views he held good. He traveled the world—he held two stars from the Airlines Hundred Thousand Miles Club—and shared data and experience with psychiatrists on five continents. He was decorated by the French and Polish governments and was an officer in the *Legion d'Honneur*. Perhaps his greatest organizational accomplishment was the detailed plans he drew up for the first great medical center in the country whereby as executive officer of the Joint Administrative Board for both Columbia University and Presbyterian Hospital he united these two great institutions in a centralized unit, the Columbia University Presbyterian Hospital Medical Center, a truly gigantic task brilliantly performed.

Dr. John I. Nurnberger, chairman of the department of psychiatry, Indiana University Medical School, and for a number of years director of residency training and of the laboratory at the Institute of Living, pays, in his foreword, warm tribute to his former chief whose pattern he emulates in his own professional career. Dr. Burlingame, he states, "was a confirmed organicist who believed, until his last day, that the secrets of the major psychiatric disturbances . . . would be revealed through structural, biochemical and neurophysiological channels," and while "he looked askance at psychoanalytically oriented psychotherapy . . . physicians competent in psychotherapeutic techniques who worked on his staff were quietly and enthusiastically supported by him directly and indirectly through his highly skilled management of the family and the friends of patients." And Dr. Nurnberger continues: "It is doubtful that any hospital of this type anywhere in the world could reflect a truly broad-spectrum eclectic program with equal skill and representation in all therapeutic disciplines."

Of great interest and value is the biographical sketch contributed by Arline Boucher Tahan. It is written with sympathetic insight and reveals the man in his enthusiasm, his tolerance, his kindness, his patience and impatience, his enormous capacity for work.

In 1931 he took over the venerable Hartford Retreat which he transformed into the Institute of Living and made it live up to its new name. Here he introduced his famed "educational therapy." Offices were opened in New York

and Boston and the interests of the Institute were served by its director being available each week for consultation in those two cities.

It may not be generally remembered that Burlingame was the first industrial psychiatrist in the United States. This phase of his career began in 1916 when he organized this new branch of industrial medicine for the manufacturing firm of Cheney Brothers of Manchester, Connecticut.

One of his most notable contributions to medicine as a whole was his arrangement with the American Medical Association in 1949 for incorporating in the programs of the annual meetings of that body a special session devoted exclusively to psychiatry and neurology. Burlingame was mainly responsible for organizing this 1949 program with the view to bringing to the attention of the general practitioner the essentials of these special fields, shorn of confusing terminology. The proceedings of this inaugural session, which took place only 6 months before his death, were published posthumously in a book titled *Neurology and Psychiatry in General Practice* and dedicated to Burlingame who had inspired it. These special programs have since been a regular feature of the transactions of the A.M.A. each year.

Burlingame was a notable pioneer in modern psychiatry and his views as presented in this book ranged over all departments of the subject and introduced numerous innovations worth following. His psychiatry was comprehensive and rooted in common sense. Education and re-education constituted the core of his therapy. For what is called "progressive" education he had little use, "because it has encouraged surface education, emotional irresponsibility, and exaggerated self-expression." The essence of psychotherapy, whatever its form, he defined as "personal tutoring in the art of living."

Recognizing that the bounds of psychiatry have been so stretched by both insiders and outsiders that one might almost say, with tongue in cheek, *nihil humani a psychiatria alienum*; Burlingame suggested that "it might be well to substitute the term psychological medicine for psychiatry, in order to disidentify this branch of medical practice from the flotsam and jetsam on the psychiatric sea."

Another important service to medical education rendered by Dr. Burlingame was the founding of the *Digest of Neurology and Psychiatry*, which abstracts month by month significant contributions from the periodical literature and from books. The *Digest* is sent free of charge to physicians and institutions throughout the world.

A special feature of the Institute is the splendidly equipped laboratory designed by Dr. Burlingame and which bears his name, and where active research is carried on.

Our gratitude to Ruth Parsons Burlingame for making this book available.

C.B.F.

SIGMUND FREUD AND THE JEWISH MYSTICAL TRADITION. By David Bakan. (Princeton, N. J.: D. Van Nostrand Co., 1958, pp. xix-328. \$5.50.)

Toward the better understanding of the origins of psychoanalysis we have recently had several valuable contributions—Jones' biography of Freud, The Fliess letters, Binswanger's and Martin Freud's books. To these may now be added Dr. Bakan's book which, I am sure, is destined to become a landmark in the study of the historical origins of psychoanalysis.

It is Dr. Bakan's thesis that psychoanalytic thinking, as expressed through the writings of Freud, owes its peculiar qualities principally to the fact that Freud had, as a Jew, learned to think in the traditionally Jewish mystical manner. Every Jew, whether he learns Hebrew or not, if he is brought up in a Jewish environment will inevitably absorb something of this mode of thinking, and it will remain with him all the years of his life. It is not an accident that the earliest and among the leading psychoanalysts of every country, men and women of Jewish cultural antecedents have played so prominent and brilliant a role.

The Jewish mystical tradition is essentially Kabbalistic, using this term in a general sense to mean not only the *traditional*, but also to cover most of those works which, like the *Zohar*, were designed to show the initiated how to extract the hidden meanings and mysteries from the Scriptures. The Kabbalistic tradition is pervaded by a sense of secrecy, mystery, and power.

Dr. Bakan, with great learning and much attention to detail, convincingly argues that Freud, in his thinking, is in the direct line of succession of the Kabbalists. Dr. Bakan's development of his thesis is a delight to follow, and I must say that I have not read as analytically enchanting a piece of research as this in years. It is quite beyond my powers to give any further account of the manner in which the author pinpoints his case without virtually reproducing his book, for like all good writers, Dr. Bakan says a maximum number of things in a minimum number of words. His book is brilliantly persuasive, and there is no doubt at all that he has written one of

the most fascinating and fundamental books on the origins of psychoanalysis that has thus far appeared.

If there is a criticism to be made it is that in his concentration upon the Jewish mystical tradition, though he has probed deeply, Dr. Bakan has not gone quite as far afield as he might have done in the Jewish tradition with reference to its influence upon Freud's thinking. Insufficient attention is paid to the *Talmud* and the *Gemorrhah*. Freud, as Dr. Bakan is well aware, in childhood had been exposed to the teaching of the Scriptures in Hebrew. This being so he could scarcely have avoided some knowledge of the existence of these works and what they dealt with. In any event, Jews are always telling stories from these works and quoting from them, as they do from the great commentators on them like Rashi or Rumbum, and others. Whether Freud heard these stories and the jokes derived from these sources in German or Yiddish is of no great moment. *Wit and the Unconscious* bears sufficient testimony to the fact that Freud didn't miss a word.

As anyone who has ever heard the *Talmud* or the *Gemorrhah* expounded by a learned Jewish commentator will know, Aristotelian or Millsian logic looks pretty pallid in comparison. The Principle of Excluded Middle, for example, simply has no existence in this mode of thought, for things *can* be and indeed *are* both A and *not-A* at one and the same time, and overt acts and statements can actually mean their contraries or contradictories, and so on. The subtlety of this kind of thinking can only be appreciated to the full by one who happens to be in the midst of it while he is at the same time studying logic and scientific method!

Every individual who is by culture a Jew is, to some extent, the heritor of this fine tradition in which he is early conditioned, and anyone at all familiar with that tradition who reads Freud can surely not have the least doubt that he was powerfully influenced by it. If there are any doubters, they should read Dr. Bakan's admirable book—but even if agreement is complete, they should read his book, anyway. It is a highly rewarding experience.

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ALCOHOL AND THE JEWS. By Charles R. Snyder. (New Haven: Yale Center of Alcoholic Studies, 1958, pp. 226. \$5.00.)

This book, subtitled "A Cultural Study of Drinking and Sobriety" and based on the author's doctoral dissertation, is Monograph No. 1 of the Yale Center of Alcohol Studies.

The purpose of these studies is to investigate

the problem of group differences in rates of drinking pathologies with the idea that known differences are not wholly explained by genetic and physiologic factors. The Jewish group was chosen as especially suitable for study because of its consistently low rate of drinking pathologies within a high incidence of drinking.

The author reports what happens to each group who drink rather than taking the entire group including abstainers. He stressed the fact that the Jew is brought up in a culture and religion which expects and approves of his drinking in moderation. The Roman Catholic and a very few Protestant groups (Church of England) have much the same attitude.

A great many tables with studies of the social and religious backgrounds of various groups of Jews, Catholics, and Protestants are given. The conclusions that seem to stand out are that there are fewer Jewish abstainers than there are Catholic and Protestant and that the more orthodox a person is in his religion, whether Jewish, Catholic, or Protestant, the less likely he is to drink excessively.

Among those who do drink, the Orthodox Jews are found to have the lowest degree of drunkenness; the Jewish Conservative group have a higher rate; the Jewish Reform a still higher rate; and the Jewish Secular the highest rate. Some evidence shows that among the Irish Catholics, intoxication varies inversely with participation in their religious activities. Among the Protestant groups, those who do drink have a higher percentage of drunkenness than do Jews and Catholics.

In a study of college students, the percentages of drinkers in each group who have been drunk over 5 times are: Jewish affiliated 4%, Italian Catholics 10%, Irish Catholics 13%, Methodist (white) 16%, Baptist (white) 15%, and Mormon 21%. The author states, "Mormons and other ascetic Protestant groups divorce the act of drinking entirely from the contexts and symbolism which are primary sources of social control (e.g., family, church, and religious community)." This would seem to indicate that in a group like the Mormons, where not only drinking alcohol but drinking coffee and tea and smoking tobacco are strictly forbidden, the individual who drinks at all has evidently broken away from his religious group. This in itself will stir up emotional problems and the individual therefore is more likely to go on to excessive drinking once he starts drinking, whereas in the Jew, whose drinking occurs under religious and family sanctions from a very early age, no such feelings are connected with the act of drinking itself.

The conclusions in this book are interesting and seem to be fairly well documented, but the material is poorly organized. The theories and other supporting data are mixed in with the examination of the data on the groups. There are no chapter summaries nor are conclusions drawn about various sections of the study. The results of the entire study are rather poorly summarized in about half a page at the end of the book. This is too bad since it may discourage some readers from wading through the entire book, which presents quite significant and important material.

K. M. B.

SCHIZOPHRENIA. By *Manfred Sakel* (New York: Philosophical Library, 1958, pp. 335. \$5.00.)

In the Foreword of this posthumously published book, Dr. Hans Hoff, present Head of the Department of Neurology and Psychiatry at the University of Vienna, where Dr. Sakel once worked in developing his method, writes "Manfred Sakel's introduction of insulin shock therapy for schizophrenia in 1927 was a milestone in the advancement of psychiatry." Most psychiatrists today will agree with this statement.

For many years schizophrenia has been designated as the most outstanding problem in mental hospitals and psychiatric practice, and its therapeutic history is filled with scores of methods of treatment that were once supported enthusiastically by groups of workers, only to be discarded later as inadequate.

The insulin coma method was unique in approach and rather startling in the favorable changes it was able to produce in certain selected schizophrenic patients. Following his graduation in medicine from the University of Vienna in 1925 Dr. Sakel made his first use of insulin to calm alcoholics and drug addicts at the Lichtenfelde Hospital in Berlin. Later (1933) the opportunity to experiment with schizophrenics was afforded him by Professor Otto Poetzl of the Vienna Clinic. These early findings with the procedure were presented in a lecture at the Academy of Science in Vienna which was published in *Wiener Klinische Wochenschrift* in 1933. This was published also in English in the *American Journal of Psychiatry* in 1937 (Vol. 93, p. 829). It is unnecessary here to trace the subsequent history of the world wide application of the insulin therapy, its various modifications and results, or to emphasize, particularly, its stimulating effect in encouraging many workers to experiment with other chemical and physical therapies. The details and the results of these

IN MEMORIAM

JACOB E. FINESINGER, M.D.

1902-1959

Jacob E. Finesinger died on June 19, 1959. At the age of 57 his already significant career was still in the process of development. He was one of the first generation of American professors of psychiatry who, while thoroughly familiar with the academic disciplines, are also trained in and conversant with psychoanalysis. In his search for truth and unifying principles, his approach was eclectic. He was fascinated by the light that the great figures in philosophy, the arts and the humanities threw upon the mysteries of human behavior; he was also acutely conscious of the importance of scientific method in arriving at valid and reliable insights. One early source of inspiration was his most admired teacher and a man of whom he spoke with feeling, H. S. Jennings, the geneticist. His debt to the father of psychoanalysis was often acknowledged with the wry comment about a colleague who seemed to have missed the point: "We can't all be Freud!" This comment reflected his characteristic impatience with intellectual mediocrity. Completely undogmatic, he maintained a questioning attitude, avoiding "closure" in discussions with colleagues and students; a favorite expression was "lets talk about it," and he loved to do just that. The breadth of his understanding, his constant pursuit of knowledge, his appreciation of the importance of investigation, and his pleasure in teaching marked him as a professor in the best sense of the word.

The son of a Rabbi, Jake, as his friends came to know him, revealed his strong identification with his background and his rich cultural heritage. Yet in his mature years, he avoided religious participation and placed his faith in rational thinking. Although he was always deeply interested in and moved by the arts, he was attracted to science at an early age. This combination of artistic and scientific interests was reflected in a series of exhibits of abstract

impressionist painting which he arranged at The Psychiatric Institute in Baltimore as part of a study of the creative process.

Dr. Finesinger was educated at The Johns Hopkins University where he received his bachelor of arts degree in 1923, a master's degree in zoology in 1925 and his medical degree in 1929. After an internship and residency in neurology at the Boston City Hospital, he pursued graduate training in psychiatry at the Boston Psychopathic Hospital. The early 1930's saw him studying psychoanalysis in Vienna and conditioned responses in Pavlov's Russian laboratory. His early stay in Vienna was very meaningful to him and he often spoke of it, particularly after his first return visit in 1957. Later, he continued his psychoanalytic training in Boston. During this period he also began his academic career at the Harvard Medical School and the Massachusetts General Hospital where he remained on the faculty, in Stanley Cobb's Department, directing the clinical psychiatric service until 1949. His research was wide ranging, encompassing physiological as well as psychological and psychiatric problems, but he gradually began to focus up in the development of systematic, rational principles of psychotherapy and interviewing technique, a subject that was to occupy him for the rest of his professional life. One of the movies of interviewing technique which he made under the sponsorship of the Veterans Administration is a classic which is widely used for teaching non-psychiatric physicians as well as resident psychiatrists.

It took much thought and some courage for Jake to uproot himself and his family from their beloved Boston for a return to the Baltimore of his youth. The transition was accomplished, however, and he came to the University of Maryland as Professor and Head of the Department of Psychiatry in 1950. In late 1952 the doors of the Psychiatric Institute of the University were opened, and he became its first Director.

Here he began to translate into reality his concept of a broad multidisciplinary approach to the problems of human behavior and he was successful in establishing an Institute in which, under one roof, the attempt to understand mental life was pursued in terms ranging from those of the neurochemist concerned with synaptic transmission, to those of the philosopher concerned with logic, morality and values. At the same time it was necessary to organize the clinical services, a training program for residents, and teaching for undergraduate medical students. It is perhaps in this last area, that of undergraduate teaching, that Jake found his greatest professional satisfactions in Baltimore. A friend and colleague of long-standing, who observed him teaching the freshman and sophomore classes some months after his illness was known, commented on the power of his communication with the students. The personal impact of his intellectual and professional message was conveyed, he said, "with all of the pungent, bittersweet flavor that was Jake." Under the Finesinger influence the medical curriculum at Maryland was broadened to grant psychiatry new importance during all four of the undergraduate years. True to form, he also initiated a research program investigating the teaching and learning process.

The community responsibilities of the academic physician in this age are heavy. Jake devoted much needed time and energy to a host of advisory boards and committees dealing with social and psychiatric problems in the Baltimore area. On the national level, in addition to membership in many professional societies, he served as consultant in psychiatry to the Veterans Administration and to the U. S. Army, and was a member of the Committee on Veterans

Medical Problems and that on psychiatry of the National Research Council. In his work with the army he was instrumental in organizing and directing a series of courses in psychotherapeutic medicine for military personnel. During the war he did research on aircraft pilot selection, served as executive for the Port of Boston, as a consultant in neuropsychiatry for the U. S. Public Health Service, and as a member of the Medical Advisory Board of the Selective Service System. An honor which gave him particular pleasure was his appointment in January 1958 as Editor-in-Chief of *The Journal of Nervous and Mental Diseases*.

One measure of a man is the manner in which he meets his final illness. Jake lived for thirteen months following an operation which revealed the inevitable prognosis. During this time and even during the final weeks of hospitalization, he revealed a personal courage and consistent concern with the well-being of those around him which continued his influence as a teacher to the last.

He is survived by his wife, the former Grace Lubin, who has shared his interests, and by his children to whom he transmitted a respect and an appreciation for the things which he, himself, considered important. His son, Joe L. Finesinger, is a medical student at Western Reserve and his daughter, Ruth, is married to Dr. Sheppard Kellam, one of his former students, who is now in his final phase of training in psychiatry and engaged in research in neuropharmacology. In addition he leaves two brothers, Dr. Abraham L. Finesinger and Dr. Solomon B. Finesinger, and his sister, Mrs. Irving Blank.

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PSYCHIATRIC EVALUATION OF CANDIDATES FOR SPACE FLIGHT¹

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The high levels of stress expected in space flight require careful screening of potential pilots by psychological and physiological techniques. Since emotional demands may be severe, special emphasis must be placed on psychiatric evaluation of each candidate for a space mission.

The selection process begins with a detailed analysis of both the pilot's duties and the conditions under which he will carry them out. As long as we have had no direct experience with space flight, some aspects of this analysis will necessarily be speculative. We must thus rely heavily on knowledge of behavior during stress situations in the past. As a result, data from military operations, survival experiences and laboratory experiments have guided the choice of men for space missions now being planned.

After the requirements of the mission and the qualifications of the individual best suited to accomplish it have been decided, it is necessary to select measures for determining who has the most of each desirable characteristic and the least of each undesirable characteristic. This can be done by using interviews and projective tests to give an intensive picture of each individual. Objective tests supplement the personality evaluation and measure intellectual functions, aptitudes and achievements. After examination of the background data, interview material and test results, clinical judgment is used to decide which men are psychologically best qualified for the assignment.

As first-hand knowledge of space flight increases, these procedures must be re-examined. When enough data have accumulated, predictions can be checked against

performance criteria. Methods which predicted accurately will be retained and improved. Those with little value will be discarded. New measures can be added on the basis of increasing experience. Once correlations between psychological variables and the quality of performance have been determined, the accuracy of future selection programs should be raised.

A clinical approach of this type was used in selecting pilots for the first U. S. manned satellite experiment—Project Mercury. The objective was to choose men for a two-year training program, followed by a series of ballistic and orbital flights. The pilot's duties will consist largely of reading instruments and recording observations. However, he will retain certain decision-making functions, and will be required to adapt to changing conditions as circumstances may demand.

By combining data on the nature of this mission with information on behavior during other stressful operations, the following general requirements were established:

1. Candidates should have a high level of general intelligence, with abilities to interpret instruments, perceive mathematical relationships and maintain spatial orientation.
2. There should be evidence of sufficient drive and creativity to insure positive contributions to the development of the vehicle and other aspects of the project as a whole.
3. Relative freedom from conflict and anxiety is desirable. Exaggerated and stereotyped defenses should be avoided.
4. Candidates should not be over-dependent on others for the satisfaction of their needs. At the same time, they must be able to accept dependence on others when required for the success of the mission. They must be able to tolerate either close associations or extreme isolation.

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

² Stress & Fatigue Section, Biophysics Branch, Aerospace Medical Laboratory, Wright-Patterson Air Force Base, Ohio.

5. The pilot should be able to function when out of familiar surroundings and when usual patterns of behavior are impossible.
6. Candidates must show evidence of ability to respond predictably to foreseeable situations, without losing the capacity to adapt flexibly to circumstances which cannot be foreseen.
7. Motivation should depend primarily on interest in the mission rather than on exaggerated needs for personal accomplishment. Self-destructive wishes and attempts to compensate for identity problems or feelings of inadequacy are undesirable.
8. There should be no evidence of impulsiveness. The pilot must act when action is appropriate, but refrain from action when inactivity is appropriate. He must be able to tolerate stress situations passively, without requiring motor activity to dissipate anxiety.

The chances of finding men to meet these requirements were increased by the preselection process. Eligibility for the mission was restricted to test pilots who had repeatedly demonstrated their ability to perform functions essential for the Mercury project. Records of men in this category were reviewed to find those best suited for the specific demands of the mission. A group of 69 were then invited to volunteer. The 55 who accepted were given a series of interviews and psychological tests. On the basis of these data 32 were chosen for the final phase of the selection program. This phase was designed to evaluate each candidate's medical and psychological status, as well as to determine his capacity for tolerating stress conditions expected in space flight.

The psychological evaluation included 30 hours of psychiatric interviews, psychological tests and observations of stress experiments. The information obtained was used to rate candidates on a 10-point scale for each of 17 categories. Ratings were made on the basis of specific features of behavior—both as indicated by the past history and as observed during the interviews. Even though the general population was used as a reference group, the scales are normative only in an arbitrary sense.

The 10 levels represent subjective decisions on which characteristics are ideal, which are average and which are undesirable. Although the reliability among raters is excellent, validation studies have not yet been done.

The categories are:

1. *Drive*—An estimate of the total quantity of instinctual energy.
2. *Freedom from conflict and anxiety*—A clinical evaluation of the number and severity of unresolved problem areas and of the extent to which they interfere with the candidate's functioning.
3. *Effectiveness of defenses*—How efficient are the ego defenses? Are they flexible and adaptive or rigid and inappropriate? Will the mission deprive the candidate of elements necessary for the integrity of his defensive system?
4. *Free energy*—What is the quantity of neutral energy? Are defenses so expensive to maintain that nothing is left for creative activity? How large is the "conflict-free sphere of the ego?"
5. *Identity*—How well has the candidate established a concept of himself and his relationship to the rest of the world?
6. *Object relationships*—Does he have the capacity to form genuine object relationships? Can he withdraw object cathexes when necessary? To what extent is he involved in his relationships with others?
7. *Reality testing*—Does the subject have a relatively undistorted view of his environment? Have his life experiences been broad enough to allow a sophisticated appraisal of the world? Does his view of the mission represent fantasy or reality?
8. *Dependency*—How much must the candidate rely on others? How well does he accept dependency needs? Is separation anxiety likely to interfere with his conduct of the mission?
9. *Adaptability*—How well does he adapt to changing circumstances? What is the range of conditions under which he can function? What are the adjustments he can make? Can he compromise flexibly?
10. *Freedom from impulsivity*—How well can the candidate delay gratification of

his needs? Has his behavior in the past been consistent and predictable?

11. *Need for activity*—What is the minimum degree of motor activity required? Can he tolerate enforced passivity?
12. *Somatization*—Can the candidate be expected to develop physical symptoms while under stress? How aware is he of his own body?
13. *Quantity of motivation*—How strongly does he want to participate in the mission? Are there conflicts between motives—whether conscious or unconscious? Will his motivation remain at a high level?
14. *Quality of motivation*—Is the subject motivated by a desire for narcissistic gratification? Does he show evidence of self-destructive wishes? Is he attempting to test adolescent fantasies of invulnerability?
15. *Frustration tolerance*—What will be the result of failure to reach established goals? What behavior can be expected in the face of annoyances, delays or disappointments?
16. *Social relationships*—How well does the subject work with a group? Does he have significant authority problems? Will he contribute to the success of missions for which he is not chosen as pilot? How well do other candidates like him?
17. *Overall rating*—An estimate of the subject's suitability for the mission. This is based upon interviews, test results and other information considered relevant.

It can be seen that categories 1, 2, 4 and 10 are largely economic constructs; 3, 5, 6 and 7 are ego functions; while the rest are specific characteristics considered important for space flight. The categories represent many different levels of abstraction and are not independent dimensions. In the final analysis, they are less a means of quantifying data than of organizing their interpretation. Not only do they provide a method to compare one subject with another, but also tend to focus attention on the material most closely related to the mission requirements.

An initial evaluation of each man was

made by two psychiatrists, through separate interviews during the preliminary screening period. One interview was devoted primarily to a review of the history and current life adjustment, while the other was relatively unstructured. Finally, ratings were compared, information pooled and a combined rating made. Areas of doubt and disagreement were recorded for subsequent investigation.

The men accepted for the final screening procedure were seen again several weeks later, after an intensive evaluation of their physical status had been completed. Each candidate was reinterviewed and the following psychological tests were administered.

Measures of motivation and personality

1. Rorschach
2. Thematic Apperception Test
3. Draw-A-Person
4. Sentence Completion Test
5. Minnesota Multiphasic Personality Inventory
6. *Who Am I?*—The subject is asked to write 20 answers to the question, "Who Am I?" This is interpreted projectively to give information on identity and perception of social roles.
7. *Gordon Personal Profile*—An objective personality test yielding scores for "Ascendancy," "Responsibility," "Emotional Stability" and "Sociability."
8. *Edwards Personal Preference Schedule*—A forced-choice questionnaire measuring the strengths of Murray's needs.
9. *Shipley Personal Inventory*—Choices are made from 20 pairs of self-descriptive statements concerning psychosomatic problems.
10. *Outer-Inner Preferences*—A measure of interest in and dependence on social groups.
11. *Pensacola Z-Scale*—A test of the strength of "authoritarian" attitudes.
12. *Officer Effectiveness Inventory*—A measure of personality characteristics found in successful Air Force Officers.
13. *Peer Ratings*—Each candidate was asked to indicate which of the other members of the group who accompanied him through the program he liked best, which one he would like to accompany him on a two-man mission

and which one he would assign to the mission if he could not go himself.

Measures of intellectual functions and special aptitudes :

1. Wechsler Adult Intelligence Scale
2. Miller Analogies Test
3. Raven Progressive Matrices—A test of non-verbal concept formation.
4. Doppelt Mathematical Reasoning Test—A test of mathematical aptitudes.
5. Engineering Analogies—A measure of engineering achievement and aptitudes.
6. Mechanical Comprehension—A measure of mechanical aptitudes and ability to apply mechanical principles.
7. Air Force Officer Qualification Test—The portions used are measures of verbal and quantitative aptitudes.
8. Aviation Qualification Test (USN)—A measure of academic achievement.
9. Space Memory Test—A test of memory for location of objects in space.
10. Spatial Orientation—A measure of spatial visualization and orientation.
11. Gottschaldt Hidden Figures—A measure of ability to locate a specified form imbedded in a mass of irrelevant details.
12. Guilford-Zimmerman Spatial Visualization Test—A test of ability to visualize movement in space.

In addition to the interviews and tests, important information was obtained from the reactions of each candidate to a series of stress experiments simulating conditions expected during the mission. Neither the design of these tests nor the physiological variables measured will be discussed. Psychological data were derived from direct observation of behavior, post experimental interviews and administration before and after each run of alternate forms of 6 tests of perceptual and psychomotor functions. These procedures were :

1. *Pressure Suit Test*—After dressing in a tightly-fitting garment designed to apply pressure to the body during high altitude flight, each candidate entered a chamber from which air was evacuated to simulate an altitude of 65,000 feet. This produces severe physical discomfort and confinement.
2. *Isolation*—Each man was confined to a dark, soundproof room for 3 hours.

While this brief period is not stressful for most people, data are obtained on the style of adaptation to isolation. This procedure aids in identifying subjects who cannot tolerate enforced inactivity, enclosure in small spaces or absence of external stimuli.

3. *Complex Behavior Simulator*—The candidate was required to make different responses to each of 14 signals which appeared in random order at increasing rates of speed. Since the test produces a maximum of confusion and frustration, it measures ability to organize behavior and to maintain emotional equilibrium under stress.
4. *Acceleration*—The candidates were placed on the human centrifuge in various positions and subjected to different "g" loads. This procedure leads to anxiety, disorientation and blackout in susceptible subjects.
5. *Noise and vibration*—Candidates were vibrated at varying frequencies and amplitudes and subjected to high energy sound. Efficiency is often impaired under these conditions.
6. *Heat*—Each candidate spent 2 hours in a chamber maintained at 130°. Once again, this is an uncomfortable experience during which efficiency may be impaired.

After all tests were completed, an evaluation of each man was made by a conference of those who had gathered the psychological data. Final ratings were made in each category described previously, special aptitudes were considered, and a ranking within the group was derived. By combining the psychiatric evaluations, results of the physical examinations and physiological data from the stress test procedures, the group was subdivided under the headings, "Outstanding," "Recommended," and "Not Recommended." Finally, 7 men were chosen from the list according to the specific needs of the Mercury project.

IMPRESSIONS OF CANDIDATES FOR SPACE FLIGHT

Although the results of the selection program can't be assessed for several years, impressions derived from psychiatric evalu-

ations of these candidates are of interest. In answer to the question, "What kind of people volunteer to be fired into orbit?" one might expect strong intimations of psychopathology. The high incidence of emotional disorders in volunteers for laboratory experiments had much to do with the decision to consider only candidates with records of effective performance under difficult circumstances in the past. It was hoped that avoiding an open call for volunteers would reduce the number of unstable candidates.

In spite of the preselection process, we were surprised by the low incidence of such disorders in the 55 candidates who were interviewed. For the 31 candidates who survived the initial screening and physical examination, repeat interviews and psychological tests confirmed the original impressions. There was no evidence for a diagnosis of psychosis, clinically significant neurosis or personality disorder in any member of this group.

Certain general comments can be made concerning the 31 men who received the complete series of selection procedures. The mean age was 33, with a range from 27 to 38. All but one were married. Twenty were from the Midwest, Far West or Southwest. Only two had lived in large cities before entering college. Twenty-seven were from intact families. Twenty were only or eldest children. (In this connection, it is perhaps worth noting that 4 of the 7 men chosen are named "junior.") Pronounced identifications with one parent were about equally divided between fathers and mothers, although mothers with whom such identifications were present were strong, not infrequently masculine figures.

Impressions from the interviews were that these were comfortable, mature, well-integrated individuals. Ratings in all categories of the system used, consistently fell in the top third of the scale. Reality testing, adaptability and drive were particularly high. Little evidence was found of unresolved conflict sufficiently serious to interfere with functioning. Suggestions of overt anxiety were rare. Defenses were effective, tending to be obsessive-compulsive, but not to an exaggerated degree. Most were direct, action-oriented individuals, who spent

little time introspecting.

Although dependency needs were not over-strong, most showed the capacity to relate effectively to others. Interpersonal activities were characterized by knowledge of techniques for dealing with many kinds of people. They do not become over-involved with others, although relationships with their families are warm and stable.

Because of the possibility that extreme interest in high performance aircraft might be related to feelings of inadequacy in sexual or other areas, particular emphasis was placed on a review of each candidate's adolescence. Little information could be uncovered to justify the conclusion that unconscious problems of this kind were either more or less common than in other occupational groups.

A high proportion of these men apparently passed through adolescence in comfortable fashion. Most made excellent school and social adjustments. Many had been class presidents or showed other evidence of leadership.

Most candidates entered military life during World War II. Some demonstrated an unusual interest in flying from an early age, but most had about the same attitudes toward airplanes as other American boys. Many volunteered for flight training because it provided career advantages or appeared to be an interesting assignment.

Candidates described their feelings about flying in a variety of terms: "something out of the ordinary," "a challenge," "a chance to get above the hubbub," "a sense of freedom," "an opportunity to take responsibility." A few look upon flying as a means of proving themselves or of building confidence. Others consider it a "way for good men to show what they can do."

Although half the candidates volunteered for training as test pilots, the others were selected because of achievements in other assignments. Most view test flying as a chance to participate in the development of new aircraft. It enables them to combine their experience as pilots and engineers. Their profession is aviation and they want to be in the forefront of its progress. Danger is admitted, but de-emphasized—most feel nothing will happen to them. But this seems to be less a wishful fantasy than

a conviction that accidents can be avoided by knowledge and caution. They believe that risks are minimized by thorough planning and conservatism. Very few fit the popular concept of the daredevil test pilot.

Although attempts have been made to formulate the dynamics underlying the pursuit of this unusual occupation, generalizations are difficult to make. Motives vary widely. While it is clear that conscious reasons may be unrelated to unconscious determinants, the variation in conscious attitudes illustrates the impossibility of a single explanation for a career which has different meanings for different individuals. One man, for example, stated that he enjoys flight testing because it allows him to do things which are new and different. He enjoys flying the newest aircraft available—vehicles that most pilots will not see for several years. Another is an aeronautical engineer who is primarily interested in aircraft design. He looks upon a flight test much as the researcher views a laboratory experiment.

Reasons for volunteering for Project Mercury show a mixture of professionalism and love of adventure. Candidates are uniformly eager to be part of an undertaking of vast importance. On one hand, space flight is viewed as the next logical step in the progress of aviation. On the other, it represents a challenge. One man expressed the sentiments of the group by saying, "There aren't many new frontiers. This is a chance to be in on one of them." Other expressions included ; "a new dimension of flight," "a further stage in the flight envelope of the manned vehicle," "a chance to get your teeth into something big," "the sequel to the aviation age," "a contribution to human knowledge," "an opportunity for accomplishment," "the program of the future," "an interesting, exciting field," "a chance to be on the ground floor of the biggest thing man has ever done."

At the same time, most candidates were practical. They recognized that this project will benefit their careers. To some it is a chance to insure an interesting assignment. Most recognize the trend away from conventional manned aircraft and look upon the Mercury project as a means for getting into the midst of future developments. One

said, "we're the last of the horse cavalry. There aren't going to be many more new fighters. This is the next big step in aviation. I want to be part of it." Most are aware of the potential personal publicity and feel this would be pleasant—but "not an important reason for volunteering."

Although all candidates are eager to make the flight, it is not their only concern. Most want to participate in development of the vehicle and have an opportunity to advance their technical training. The orbital ride is partly looked upon as a chance to test an item of hardware they have helped develop. Risks are appreciated, but accepted. Most insist they will go only when the odds favor their return. No one is going up to die. They are attracted by the constructive rather than the destructive aspects of the mission.

Psychological tests of these 31 men indicate a high level of intellectual functioning. For example, the mean full-scale W.A.I.S. scores for the 7 who have been selected range from 130 to 141, with a mean of 135. The pattern is balanced, with consistently high scores on both verbal and performance subtests.

Projective measures suggest the same healthy adaptations seen in the interviews. Responses to the Rorschach, for example, were well organized. Although not overly rigid, they did not suggest much imagination and creativity. Aggressive impulses tended to be expressed in action rather than fantasy.

Behavior during the isolation and complex behavior simulator tests (which might be considered input-underload and input-overload situations) showed evidence of great adaptability. No candidate terminated isolation prematurely and none viewed it as a difficult experience. As might be expected for this brief exposure, no perceptual changes were reported. Fifteen subjects "programmed" their thinking in isolation. In 5 of these men, the attempt to organize thoughts was considered evidence of an overly strong need for structuring. Sixteen permitted random thought, relaxed and enjoyed the experience. Most slept at least part of the time.

When placed under opposite conditions, with too much to do instead of too little,

the candidates were usually able to keep from falling hopelessly behind the machine. Only a few were troubled by the impossibility of making all responses promptly. The majority became content to do as well as possible, showing a gradually increasing level of skin resistance, even though working at a frantic pace.

Reactions to physiological stressors correlated positively with the psychiatric evaluations. Candidates who had been ranked highest on psychological variables tended to do best in acceleration, noise and vibration, heat, and pressure chamber runs. Their stress tolerance levels were among the highest of the hundreds of men subjected to these procedures in the past. Uncomplaining acceptance of the discomforts and inconveniences of this phase of the program appeared to reflect not only their strong motivation, but also their general maturity and capacity to withstand frustration.

In summary, it is suggested that the most

reasonable approach to selecting men for doing something no one has done before is to choose those who have been successful in demanding missions in the past. To decrease the probability of error, a broad sample of behavior must be observed. Every effort should be made to make these observations as relevant to the expected demands of the mission as possible.

By selecting only those candidates who were able to adapt to whatever conditions confronted them, we hope we have found those who are best qualified for space flight. Our confidence is further strengthened by the attitudes of the men who were chosen. Most reflected the opinion of the candidate who, when asked why he had volunteered, explained: "In the first 50 years since the Wright Brothers, we learned to fly faster than sound and higher than 50,000 feet. In another 5 years we doubled that. Now we're ready to go out 100 miles. How could anyone turn down a chance to be part of something like this?"

A GRAPHIC COMPARISON OF FIVE PHENOTHIAZINES

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ELAINE MANSFIELD, R.N.,³ AND ALFREDO FIGAREDO, M.D.³

The rapidity with which new medications for the treatment of the mental ill are being made available requires some system of screening these compounds which will permit of an early conclusion as to their clinical effectiveness and toxicity. Ideally, such a screening procedure would be sufficiently standardized to allow of a clinical comparison of the effectiveness of compounds thought to have similar actions. This is a report of such a screening method and the result of its use in evaluating 5 different phenothiazine derivatives.⁴

METHOD

To compare the relative effectiveness of different compounds, it is necessary to standardize the patient group, methods of evaluating behavioral change, and the routine to be followed in administering the several drugs. To accomplish these ends, the following was carried out:

Pertinent data on 2,200 patients were tabulated on key-sort cards. This allows of a rapid selection of similar groups of patients in accord with the desired criteria. In the studies reported here, these criteria consisted of duration of hospitalization, age, willingness to take oral medication, and diagnosis.

The patient group was composed of chronic patients hospitalized a minimum of

one year. Diagnostically, all of those included were schizophrenic reactions with the exception of 3 who were classified as manic-depressive reactions.

The forms for recording behavioral change were standardized and included a modified mental status, an observation checklist, an activity chart, and progress notes described previously. The data recorded on these charts were in the form of observation or a verbatim recording of the patients' statements and not based on the judgment or opinion of the recorder. In each drug study the same psychiatric nurse made all the observations.

The routine followed in administering the products being evaluated was the same as that pursued in the ordinary medical treatment of the patient on the ward. No change in the personnel responsible for the patients' care was made and the patients remained on the wards where they had been previously housed.

Since the same or similar patients were treated with more than one compound and the criteria for determining behavioral change were standardized, the improvement and side effects noted are graphic.

The following descriptions are included for each compound: 1. The name of the preparation being tested. 2. The patient group. 3. Dosage. The dosage shown for each drug was increased uniformly at the indicated intervals, with these exceptions: (a) When side effects developed, the dosage was not increased, and if the side effects persisted the dose was reduced to the previous level or the drug was discontinued depending on the nature and severity of the side effect; and (b) If half of the patients developed side effects, no further increase in dosage was attempted.

SUMMARY

Five phenothiazine derivatives have been studied using similar groups of patients and similar methods of evaluating and recording behavioral change. All of the patients included in these reports had been hospitalized longer than one year and had

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⁴ The medications for these studies were supplied by: The Upjohn Company, Kalamazoo, Mich.; The Squibb Institute for Medical Research, New Brunswick, N. J.; Winthrop Laboratories, New York, N. Y.; Schering Corporation, Bloomfield, N. J.; and G. D. Searle Company, Chicago, Ill.

The following also supplied grants-in-aid: The Upjohn Company, The Squibb Institute for Medical Research, and Winthrop Laboratories. These studies were supported in part by the Nebraska Board of Control Fund for Psychiatric Research.

FACTORS INDICATING IMPROVEMENT

Improvement, minimal (+1):

Indication of a consistent though slight increase in 2 or more of the following:

- Participating in activities
- Socialization
- Interest in personal appearance
- Appropriate affect and speech
- Attention span, alertness
- "Feeling better" (patient's statement)
- Friendliness
- Cooperation
- Attempt to communicate

Decrease in:

- Agitation
- Tension
- Incontinence
- Overt Hostility

Improvement, marked (+2):

Definite and consistent increase in the criteria listed for minimal improvement, resulting in any or all of the following:

Marked improvement in behavior and appearance.

Delusions or hallucinations diminished and of less concern to the patient.

Spontaneous answers during interview with increased interest in surroundings.

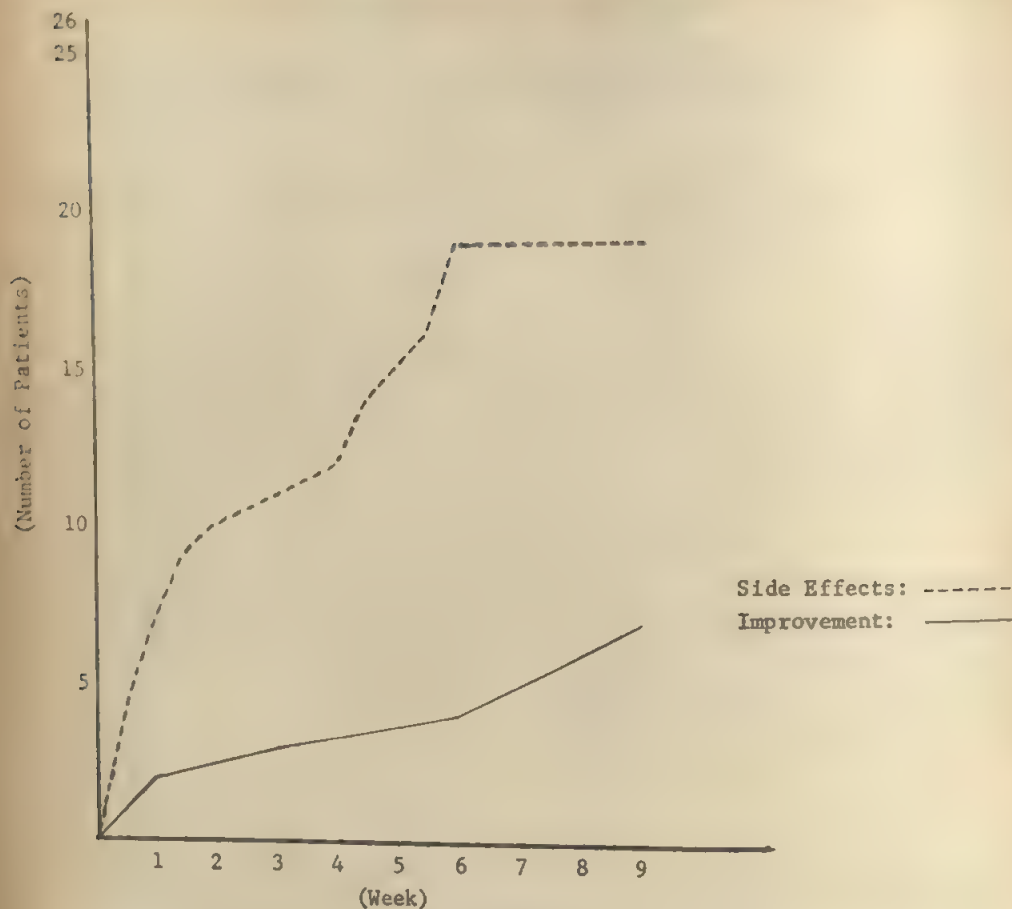
FACTORS INDICATING SIDE EFFECTS

1. Leukopenia
2. Facial edema, skin rash
3. Tremor, loss of associated movements, muscular rigidity
4. Drooling, mask-like facies or dysphagia
5. Decrease in motor activity sufficient to interfere with participation in routine activities
6. Increased agitation with depression and somatic complaints
7. Marked hypotension, syncope
8. Nausea and vomiting
9. Marked pallor

RESULTS

The 5 preparations evaluated were:

1. SQ 4918 : 4-[3-[2-(trifluoromethyl)-10-phenothiazinyl] propyl]-1-piperazineethanol dihydrochloride (Vespazine)
2. Win-13, 645-5 : 8-[3-[10-(2-Chlorophenothiazinyl)] propyl]-3-hydroxynortropane ethanesulfonate
3. SC-7105 : 1-(2 acetoxylethyl)-4-[3-(2-chloro-10-phenothiazine) propyl] piperazine dihydrochloride (Dartal—Brand of thiopropazate dihydrochloride)
4. Adazine : 10-(3-dimethylaminopropyl)-2-(trifluoromethyl) phenothiazine hydrochloride
5. Sch-3940 : 1-(2-hydroxyethyl)-4-[3-(2-chloro-10-phenothiazyl)-propyl]-piperazine (perphenazine—Trilafon)



SQ 4918

28 Schizophrenics, 12 male, 14 female

Age Range :	25-58	20-29	2
		30-39	4
Average :	47.0	40-49	6
		50-59	14
		60 and over	0

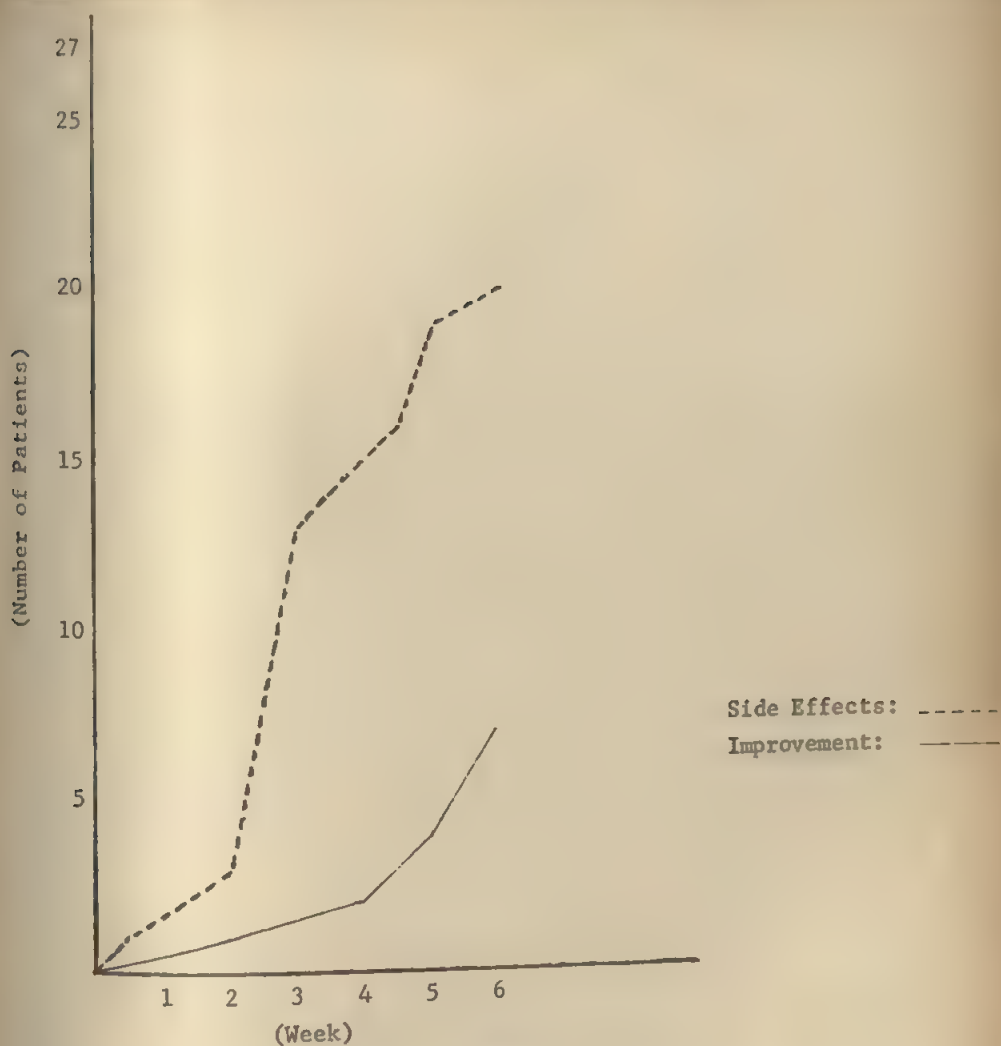
Dosage :	first 2 weeks	3 mg./day
	second 2 weeks	6 mg./day
	third 2 weeks	8 mg./day
	fourth 2 weeks	10 mg./day
Maximum Dosage :		6 mg./day

Length of Hospitalization

Average : 15.2	5 years or over	22
	4 years	0
	3 years	2
	2 years	2
	1 year	0

NUMBER OF PATIENTS

Improved, minimal :	6
Improved, marked :	1
Side Effects :	19



WIN-13

27 Patients, 13 male, 14 female

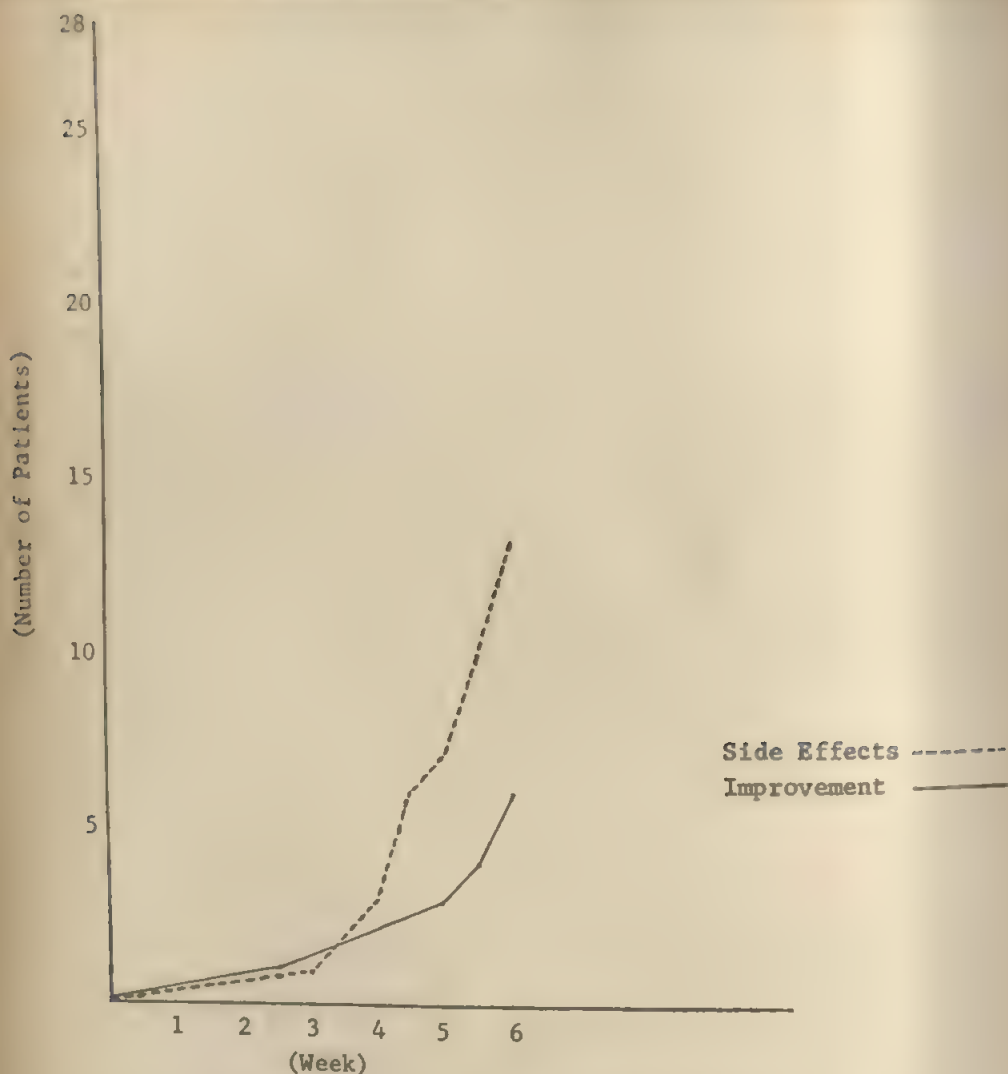
Age Range :	26-68	20-29	1
		30-39	4
Average :	51.8	40-49	5
		50-59	10
		60 and over	7
Dosage :	1st week	25 mg./day	
	2nd week	25 mg./day	
	3rd week	50 mg./day	
	4th week	75 mg./day	
	5th week	75 mg./day	

Length of Hospitalization

Average :	21.0	5 years or over	26
		4 years	0
		3 years	0
		2 years	0
		1 year	1
Diagnosis :		Schizophrenia	26
		Manic-depressive	1

NUMBER OF PATIENTS

Improvement, minimal :	7
Side Effects :	20
Improved, marked :	0



SC-7105

28 Schizophrenics, 15 male, 13 female

Age Range: 29-62

20-29 3

Average: 15.4

Length of Hospitalization

5 years or over 25

30-39 2

4 years 0

Average: 46.7

40-49 16

3 years 1

50-59 3

2 years 1

60 and over 4

1 year 1

Dosage: 1st week

10 mg.

20 mg.

30 mg.

40 mg.

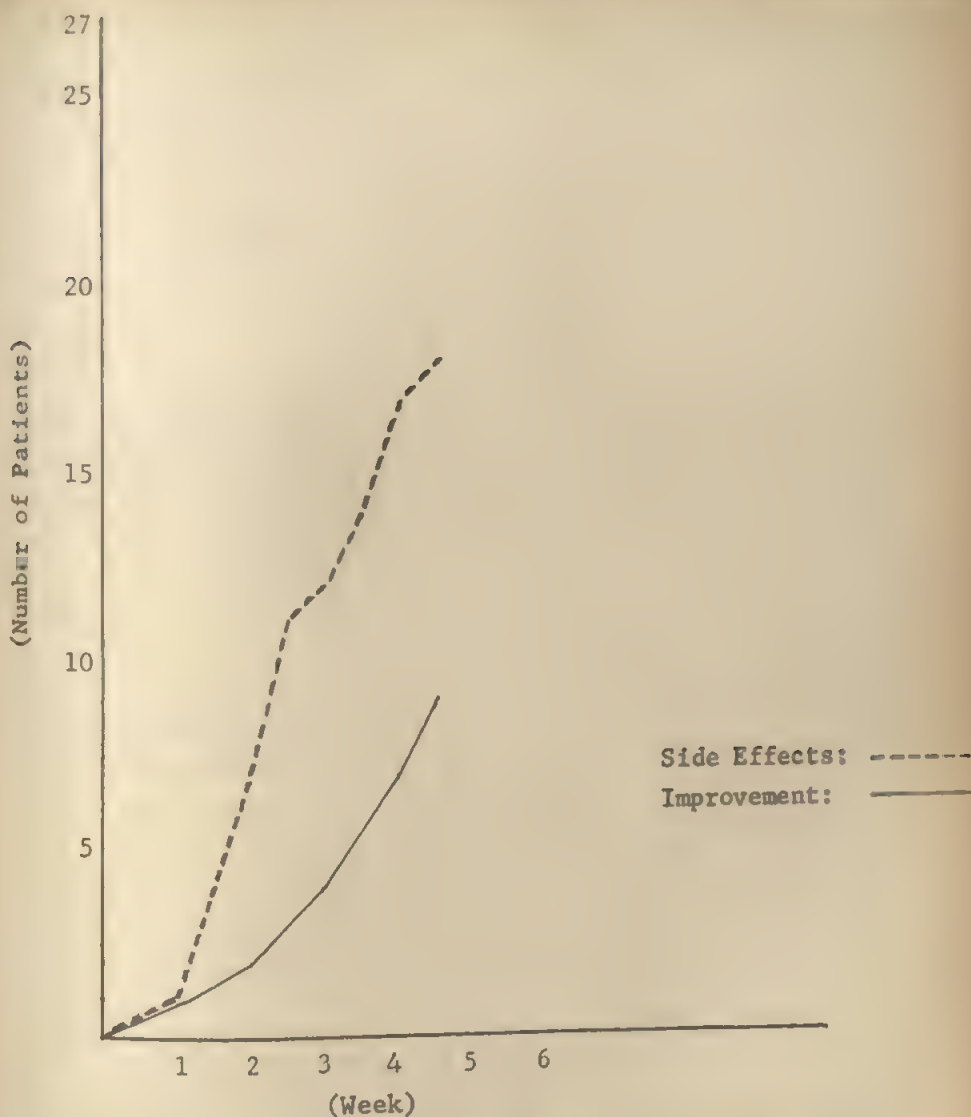
50 mg.

NUMBER OF PATIENTS

Improved, minimal: 6

Improved, marked: 0

Side Effects: 13



ADAZINE

27 Schizophrenics, 12 male, 15 female
 Age Range : 31-67

20-29	0
30-39	5
40-49	13
50-59	6
60 and over	3

Average : 47.8
 Dosage :

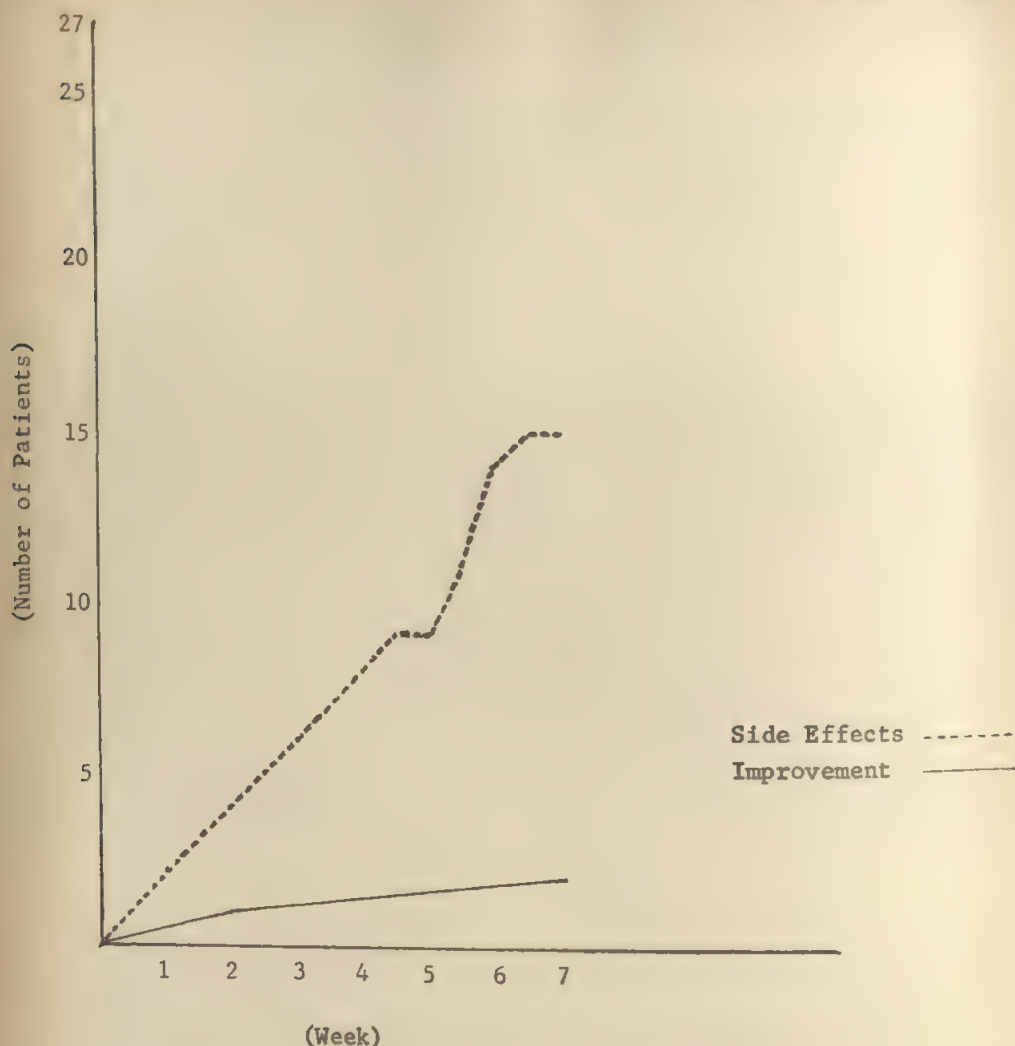
1st 4 days	50 mg./day
1st week	100 mg./day
2nd week	200 mg./day
3rd week	300 mg./day
4th week	350 mg./day
5th week	400 mg./day

Length of Hospitalization

Average : 18.6	5 years or over	26
	4 years	0
	3 years	0
	2 years	1

NUMBER OF PATIENTS

Improved, minimal :	8
Improved, marked :	1
Side Effects :	18



TRILAFON

27 Patients, 11 male, 16 female

Age Range :	36-62	20-29	0
		30-39	1
Average :	52.5	40-49	11
		50-59	11
		60 and over	4
Dosage :	1st week	12 mg.	
	2nd week	16 mg.	
	3rd week	20 mg.	
	4th week	24 mg.	
	5th week	28 mg.	
	6th week	32 mg.	

Length of Hospitalization	Average :	16.8	5 years or over	26
			4 years	1
			3 years	0
			2 years	0
			1 year	0

Diagnosis :	Schizophrenics	25
	Manic-depressive, manic	1*
	Manic-depressive psychosis	1*
*hospitalized 26 years		

NUMBER OF PATIENTS

Improved, marked :	0
Improved, minimal :	2
Side Effects :	15

been refractory to previous treatment efforts.

The results indicate that this group of chronic patients, all but 3 of whom were schizophrenic, were no more responsive to these compounds than to treatment procedures earlier tried. The graphing of the data simplifies the comparison of compounds evaluated under similar conditions.

Improvement occurred so infrequently in these screening procedures that a controlled or "double-blind" study did not appear necessary.

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SUICIDE IN ADOLESCENTS¹

BENJAMIN H. BALSER, M.D.,² AND JAMES F. MASTERSON, JR., M.D.³

The problem of suicide in adolescents has received little study. With the exception of Mason's report in 1954(10), on four cases of suicidal attempt in adolescents, no reports were found. There are a few reports on child suicide, but by far the great majority of studies have been done on adults. As a background for a general study of suicide in adolescents, pertinent points in the literature on both child and adult suicide will be presented.

REVIEW OF LITERATURE

Adult

Psychoanalytic.—Suicide has been customarily associated with the affective disorders, and the dynamics as indicated by Freud(4) and Abraham(5) in depression, that is, dependent ambivalence, guilt, oral incorporation, turning of the hostility against the self. However, Zilboorg stressed the point that no clinical entity is immune to suicidal drive(21), and that it is not possible to demonstrate the dynamics of depression as the only determining factor. He suggests the possibility that there is more predisposition to suicide where there is a history of death of a person close to the child during the phallic or pubertal period, especially if these events occur with a background of strong, constant stimulation of the child's attachment to one of the parents. He also suggests that suicide at puberty is a primitive, impulsive result of frustrated genital wishes rather than oral aggressive or spite wishes. Menninger describes the 3 elements to the suicidal drive (11), that is, the desire to kill, be killed, and to die. He also mentions the concept of partial suicide.

Clinical.—Studies have been done on both completed suicide and suicidal attempts. Jamieson in a study of 100 hospital cases of completed suicides found that 65% had been diagnosed as affective disorders and 15% schizophrenic and paranoid disorders (6). This would support the conclusion that in these adults who are emotionally disturbed and commit suicide the affective disorders play a predominant part. Sixty-seven percent of the patients had one or more previous suicidal attempts and 61% had a history of psychosis or suicide in the family. Several studies on suicidal attempts support the importance of the loss of a parent early in life. Palmer(12) and Reitman(13) each studied 25 cases of suicidal attempts and found that 68% had lost one or both parents before 14. Stengel(17) in 1942, in a follow-up study of 138 patients with suicidal attempts found only one death by suicide and concluded that suicide and suicidal attempts are separate groups, but that they overlap.

Weiss reports that suicide is more common in older age groups(19), single, divorced or widowed males, while suicidal attempts are more common in younger age groups, and in married women. In reviewing the statistics on suicide versus suicidal attempt, he concluded that many suicidal attempts are like Russian roulette with the lethal probability varying from certain survival to certain death, with an external force compelled to make the decision. Rubinstein, *et al*(14), in 1958, reported a study of 44 suicidal attempts seen in emergency, from the point of view of motivation, interpersonal communicative functions, and social effects. They concluded that in 36 of the cases, the patient was involved in struggles with persons important to him and that the suicidal attempt was self preservative, directed at mobilizing support and effective changes; that a continuum exists between this motivation and the directing of aggressive and destructive impulses toward the self and others. The 8 patients without desired social effects

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were found to have more serious emotional illnesses.

Children

Suicide in children is rare, usually impulsive, and not particularly associated with depression and suicidal preoccupation. In statistical studies, no deaths are reported in children under 5, and the number of deaths in the United States in the 5-14 age group between 1930-1945 ranged between 39-59 per year(21). It would be very interesting to know how many of these deaths occurred between 12 and 14. The boy-girl ratio is 6:1. Despert reviewed 400 consecutive cases (ages 2-16) for depressive mood and/or suicidal preoccupation or suicidal attempt(3). She found 26, of whom only 5 had manifested intense suicidal preoccupations and gone through aborted suicidal attempts. The remaining 21 showed depressive mood without suicidal preoccupation or intent. She mentions that since child suicides are impulsive, they usually escape the attention of the psychiatrist. She concludes that depression and suicide are rare in children and do not have the close association assumed to exist in adults.

Schecter(15) gives a theoretical basis to Despert's(3) findings by stating that since the child is so dependent on the love object for gratification, and since the process of identification is not complete, the turning of hostility against the self is too frightening, thus, children rarely commit suicide, but express self-destructive feelings in other ways, *i.e.*, suicidal equivalents, depression, accidental injuries, antisocial acts.

Keeler in a study of 11 children's reactions to the death of a parent was able to demonstrate several findings(7). Depression, present in all 11, was highly correlated with presence of strong feelings toward the parent. Fantasies of reunion with the dead parent were present in 8, and identification with the dead parent in 7. Suicidal preoccupation and attempts in 6 seemed to represent identification with the deceased parent, a wish to be reunited, an attempt to escape an unbearable situation, and expression of aggression toward themselves.

Schilder and Wechsler observed that the child thinks about death as a kind of deprivation which is unbearable but seldom permanent(16). The child expects the destroyed object to return. Bender and Schilder concluded in another study(1), the child reacts to an unbearable situation with an attempt to escape. Mostly these unbearable situations consist of the deprivation of love which provokes aggressiveness against those who deny love. Under the influence of guilt these tendencies are turned against the self. The suicidal attempt constitutes a punishment against the environment, and an attempt to get a greater amount of love.

SUICIDE IN ADOLESCENTS

Mason reported 4 adolescent diabetics who used their illness as a mechanism for suicidal attempts(10); discussed the concept of partial suicide and questioned the relationship of incestuous preoccupations to suicide in adolescents. Bakwin(1) reports that suicide is the 5th cause of death in the 15-19 age group and represents 2.5% of all deaths in this group. The mortality per 100,000 varies considerably from country to country with Japan being the highest: 26.1 for boys and 18.7 for girls, and Ireland the lowest with 0.6 for boys and 1.1 for girls. The rate in the United States which is 4.6 for boys and 1.6 for girls has been steadily declining for the last 35 years.

To investigate the relative prevalence of the suicidal problem in adolescents, statistics were obtained both on completed suicide and on suicidal attempts (Fig. 1).

There are about 280-290 suicides in the adolescent age group (15-19) in a year in the United States. This number is only about 2% of the total, but it is 6 times higher than the 10-14 age group. It would be interesting to know how many in the 10-14 group are 13 or 14. At any rate, there is a sharp increase in completed suicide during adolescence as compared to childhood. The male-female ratio is 3:1, which is about half the ratio found in children.

Fig. 2 shows a review of two studies on suicidal attempts by Landrum(8) and Piker(9).

It has not been previously stressed that

FIG. 1

NUMBER OF COMPLETED SUICIDES PER YEAR BY AGE GROUP IN UNITED STATES(22)

Age	Year				
	1951	1952	1953	1954	1955
10-14	51	39	58	37	37
15-19	270	295	298	261	285
20-24	670	586	611	604	569
Over 24	14,918	14,647	14,980	15,654	15,864
Totals	15,909	15,567	15,947	16,556	16,755

FIG. 2

NUMBER OF SUICIDAL ATTEMPTS BY AGE GROUP

Age	Landrum(8)		Piker(9)	
10-14	5 (male = 1	female = 4)	15 (male = 4	female = 11)
15-19	122 (male = 11	female = 111)	223 (male = 24	female = 199)
20-24	239		409	
Over 24	634		1,170	
Totals	1,000		1,817	

suicidal attempts in adolescents represent such a large percentage of the total attempts, namely, 12%. There is a marked increase in attempts in the 15-19 group over the 10-14 group. This increase is many times greater than that which occurs in completed suicides. The increase occurs mostly in females who represent over 90% of the total. The female-male ratio was 10 : 1, the highest for any age group. The total of the female attempts was third highest, ranking only behind 20-24 and 25-29, while the male total was the lowest for any age group until the age of 65.

It would seem that the study of completed suicide alone gives a misleading picture of the total problem and that suicidal attempts, particularly in adolescent females are much more prevalent than they were thought to be.

The material reviewed raises many questions. What causes the female ratio for suicidal attempts to be so much higher than the male? Is there something in our culture that predisposes the female to use suicidal attempts in adolescence? Jamieson notes that depression and suicide have a close relationship in adults(6). Despert notes that depression and suicide do not have the same relationship in children(3). What is the relationship between suicide and affective disorders in adolescents?

Mason raised the question of the relationship of incestuous preoccupations to suicide (10). Could it be more present or more frustrated in females than in males? Zilboorg, Reitman, Palmer, Keller raise the question of the effect of death of a parent during childhood on later suicidal drive. Stengel, Weiss, Rubinstein postulate that successful suicide and suicidal attempts represent two different groups.

MATERIAL STUDIED

The goal of the present study was to investigate the total problem of the suicidal drive in adolescents. For this purpose 100 patients from the Payne Whitney Clinic Outpatient Department, 100 patients from private practice, and about 300 adolescent patients hospitalized at Payne Whitney Clinics were reviewed. The age range was 13-19 inclusive. Suicidal attempts were made by 3 in the private practice group, by 2 in the outpatient group and by 32 in the inpatient group, for a total of 37, of which 23 were diagnosed as schizophrenic; 4 of the 5 outpatients and 19/32 inpatients. This was such a striking finding that it was decided to concentrate this report on the relationship between schizophrenia and suicidal attempt in adolescents.

The psychopathology of the schizophrenic patients was primarily of the catatonic

and paranoid types. There was a clear delineation into acute and chronic types, and examples of both are given below :

Acute Schizophrenic Reaction.—H. H., a female, 18 years old, was admitted to the hospital 2 weeks after attempting suicide by jumping from a train. She was traveling home from college with a nurse because of depression and inability to concentrate and do work, despite adequate intelligence.

Diagnosis was schizophrenia, catatonic type. Patient was delusional, had auditory hallucinations, and spoke with inappropriate affect. She was preoccupied, mute, with muscular rigidity. She would not eat and was fed by tube for 8 weeks in the hospital. She was physically unkempt and had occasional urinary incontinence.

A month after hospitalization, patient was given subcoma insulin treatment. She still remained mute but became less resistant to treatment, although she made several attempts to escape through windows. Muscular rigidity, negativism, and feeding difficulties continued. Patient finally was transferred for chronic hospitalization.

Patient was a delicate child and a constant feeding problem, with many colds and allergic complaints. She studied unusually hard to achieve her good marks, competing with a most successful older brother and father. Patient was sensitive, stubborn, with body over-concern. There was a history of occasional depressed and tense periods with insomnia. Menses started at 13, were normal until onset of present illness, then stopped. Patient entered the college of her choice, but disliked her roommate and couldn't concentrate. She was referred to a psychiatrist who recommended that she be sent home.

Her father was a physician, domineering, and over-solicitous, who handled all the patient's physical problems, although he was strongly unsympathetic toward her mental illness. Patient felt this as rejection and showed passive resistance and some negativism toward him. Mother was a diabetic, shallow and unintelligent, who always preferred the brother to the patient.

Chronic Schizophrenic Reaction.—T. S., male, 17 years old, was admitted to hospital following a suicide attempt by ingestion of 110 sleeping tablets. Diagnosis was schizophrenic reaction. Patient discussed this suicide attempt in a very flattened, unemotional way, was confused, suspicious, delusional, and objected to group living. He felt he must die and

everyone else must die too. He had written 3 suicide notes in the previous year.

Patient was first seen at 13 in private psychiatric practice as an ambulatory patient. He was nervous, depressed, and had made suicidal threats. He complained of insomnia, and poor appetite. Despite a high I.Q. he was having academic difficulty and his school adjustment was bad, with no close friends.

His parents were divorced when patient was 9 and both remarried; his mother having 2 more children with her second husband. Patient respected his father with whom he lived after the divorce, but hated his very strict stepmother. His brother and sister were mentally ill. Paternal grandmother was hospitalized for depression and mental illness. A maternal uncle was alcoholic and suicidal. Patient was very fond of his mother with whom he could communicate and secure affection. He preferred living with her. Patient was very jealous of his two siblings, an older brother, a schizophrenic with a short history of hospitalization, and a younger sister.

Patient was enuretic until 9, a thumbsucker, who had night terrors. He was thin and a poor eater as a child. He stated that after the divorce he felt like a football being kicked between his father's home in one city, and his mother's home in another. There was only brief mention of two girl friends in patient's life by his parents, and patient did not seem unduly upset by any incident concerning them; yet one of his suicide notes was to his latest girl. He was found accidentally after he had taken the massive dose of sleeping pills.

DISCUSSION

In clinical evaluation of suicidal potential the role of depression has always been considered to be paramount. A few studies in children indicate that this is not true with children, and our study would suggest that it is not true with adolescents. One might say that since the majority of our patients were from a hospital population one would expect the schizophrenics to predominate. Though this is true, 4 of the 5 outpatients were also diagnosed as schizophrenic. Clearly, more work is needed to establish whether or not these suggestive findings can be corroborated. However, the predominance of schizophrenic psychopathology in adolescent patients attempting suicide warrants emphasis and investigation. Psychiatrists and other physicians, as well as school masters

and teachers, customarily look for depressive features as the primary type of pathology about which they might worry in terms of suicidal ideas or attempts. It would seem that it is the schizophrenic adolescent who warrants more attention. In our group of patients we noted that the clinical paranoid and catatonic types were the characteristic ones that showed such tendencies. In only one female were there any hebephrenic features and none of the patients was of the simple schizophrenic reaction type. Specific pathology included dissociation, hallucinations, delusional ideas, withdrawal, suspiciousness, and lack of communicability. In many of the patients there were also depressive trends, but these were not necessarily present or when present, obvious. Whether or not there was attempt at communication with other individuals such as parents or extra-familial loved objects could not be specifically ascertained in each situation. Certainly it was present in some instances.

The picture of the adolescent patient who will attempt suicide may be reconstructed in approximately the following way: He or she is an individual who is delusional in varying degrees, withdrawn, spending a considerable amount of time in fantasy activity, with little if any somatic complaints, but constructing a picture of supposed wrongs done to him by associates, parents, or siblings. This individual may show very little by way of overt anxiety and might or might not have complaints of feelings of depression. Sleep and appetite may be totally undisturbed. This picture contrasts quite sharply with the depressive reaction ordinarily seen in the adult who makes a suicidal attempt.

CONCLUSIONS

1. The prevalence of suicidal attempts in adolescents has been obscured by the paucity of completed suicides in that period.

2. In adults the relationship between affective disorders and suicide has been es-

tablished. In adolescents it would seem that this relationship exists between schizophrenic reaction and suicidal attempt rather than affective disorder and suicidal attempts.

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THE CONCEPT OF PSYCHIC DETERMINISM

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Psychic determinism is generally considered to be a basic tenet of psychoanalysis. Thus, according to Ferenczi(3), "Psychoanalysis . . . stands upon the firm foundation of the strict determination of psychic happenings." What is the meaning of psychic determinism? Is it a scientific principle, or merely a useful catch-word? The purpose of this paper is to define and evaluate this important concept.

Although the concept is often treated as self-explanatory, some authors take pains to clarify its meaning. Hence one may formulate definitions based upon actual usage. In order to do so, this paper will present a number of excerpts from the literature of psychoanalysis and the philosophy of science.

PSYCHIC DETERMINISM AS A FORM OF CAUSALITY

According to one usage, psychic determinism may be defined as the proposition that all psychic events are causally determined. The notion of causality is represented as a fundamental axiom or postulate of science, with the implication that those who doubt it cannot possibly share in the scientific outlook on the world. This view of determinism is expressed in the following passage from Freud. Here he is discussing the person who does not understand the need to explain trivial errors and slips of speech :

What does the man mean by this? Does he mean to maintain that there are any occurrences so small that they fail to come within the causal sequence of things, that they might well be other than they are? Anyone thus breaking away from the determination of natural phenomena, at any single point, has thrown over the whole scientific outlook on the world (*Weltanschauung*) (5).

This passage leaves little doubt that Freud looked upon psychic determinism as a logical consequence of the causality principle, which he considered as indispensable. His viewpoint is stated even more

forcibly in the following quotation from Schilder :

Freud believed in the absolute determinism of psychic experiences and was not inclined to believe that there is any freedom in the stream of consciousness. . . . He believed in the causal connection of psychic processes. . . . The psychic experience A may be the cause of the experience B. Psychoanalysis believes that whenever there is an inner, psychic connection between two experiences, there is also a causal connection. . . . There is no difference between so-called psychic causality and physical causality(11).

Ferenczi, like Freud and Schilder, states unequivocally that he considers psychic determinism to be an application of the causality principle :

We have long been familiar with the thought that there is no chance in the physical world, no event without sufficient cause ; on the basis of psychoanalytic experience we have to suppose just as strict determination of every mental activity, however arbitrary it may appear(4).

In this passage, Ferenczi justifies determinism "on the basis of psychoanalytic experience," as an empirical finding. Freud, on the other hand, looked upon determinism as valid independently of experience and observation, a necessary part of the scientific outlook. This difference of opinion will be discussed later in the paper.

The principle of causality has a long and respectable history which may be traced as far back as ancient Greece. For centuries it was considered as a fundamental axiom of science, but recently it has fallen into disrepute(10). In the advanced physical sciences, statements about "cause and effect" are no longer found. They have been replaced by equations in which there is nothing that could be called "cause" and nothing that could be called "effect." In everyday parlance one still says that gravity causes the stone to fall, but such crude formulations have no place in advanced physical theory. It is not within the scope of this paper to evaluate the causality

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principle and its role in modern science. It will suffice to mention the opinion of Russell:

The law of causality, I believe, like much that passes muster among philosophers, is a relic of a bygone age, surviving, like the monarchy, only because it is erroneously supposed to do no harm (10).

Psychoanalysts are, of course, aware that physical science has changed radically since the time of Freud. Some have been concerned about the fact that causality is no longer recognized as an axiom in physics. The dilemma has been discussed by Rado:

Indeed, all our scientific reasoning has become so intimately intertwined with the idea of determinism that a science lacking this concept is altogether unthinkable. Yet there exists a large number of facts which prove with indubitable certainty that this conviction is unfounded and that scientific research can tranquilly proceed, albeit the bed-rock of causality has been forsaken (8).

If psychic determinism is the "firm foundation" of psychoanalysis, and if this "bed-rock" has been forsaken, then what is the fate of psychoanalysis? Must the analysts revise their basic assumptions in order to conform to changes in physics and the philosophy of science? Schilder would answer in the affirmative:

We do not have the right to retain a concept which corresponds to principles of physics which are no longer valid and to still model our psychological theories according to these concepts (11).

Others would feel that there is no reason why the concepts of psychology must be restricted to those of physics. Thus Rado advocates that psychoanalysis should cling to the deterministic point of view:

Psychoanalysis has but recently begun to exploit the immeasurable advantages that the deterministic viewpoint affords it and it will have to work hard to exhaust the possibilities of that principle. . . . We cannot see when and at what point in our work the statistical view, or one as yet unknown, will oust determinism from the domain of psychoanalysis. But I should not be surprised were psychoanalysis to succeed in attaining a complete understanding of our mental life with its deterministic manner of viewing things (8).

Rickman is another of the psychoanalysts who have recognized that causality is no longer an axiom but merely a dogma. Like Rado, however, he advocates that the analysts should retain it as a heuristic principle (9). In support of this opinion, one should observe that the notion of cause and effect is still widely employed in medicine. Standard textbooks continue to discuss the "etiology" of diseases, and researchers are still looking for the "causes" of various ailments.

The analysts are, of course, in the best position to know which concepts are most useful in their own research. If they are not prepared to abandon psychic determinism, then it would seem desirable to redefine that concept in terms that do not involve a rejected principle of physics. It is, in fact, possible to frame an acceptable definition without reference to causality.

DETERMINISM AND THE FUNCTION CONCEPT

In advanced sciences, causal explanations have been replaced by formulas involving the concept of a function. As a matter of theoretical interest, it would seem worthwhile to redefine psychic determinism by means of the newer concept, if only to demonstrate that psychoanalysis need not depend upon the causality principle. To a person encountering the new definition for the first time, it would no doubt seem artificial and too general to be of any great use. In this connection Russell has made the comment:

No doubt the reason why the old "law of causality" has so long continued to pervade the books of philosophers is simply that the idea of a function is unfamiliar to most of them, and they therefore seek an unduly simplified statement (10).

A function of a variable x is defined as a second variable y so related to x that whenever a value is assigned to x , a corresponding value of y is uniquely determined (12). This relationship is expressed in the familiar notation:

$$y=f(x).$$

The correspondence between values of x and y need not be made by means of what is usually called a mathematical expression, but may be determined in any way whatever, provided that whenever a value is

assigned to x a corresponding value of y is uniquely determined (7).

Using the concept of a function, Russell has defined a deterministic system as follows (10) :

A system is said to be "deterministic" when, given certain data e_1, e_2, \dots, e_n , at times t_1, t_2, \dots, t_n respectively, concerning this system, if E_t is the state of the system at any time t , there is a functional relation of the form

$$E_t = f(e_1, t_1, e_2, t_2, \dots, e_n, t_n, t).$$

Let E_t be the state of the psyche at any time t , and let e_1, e_2, \dots, e_n be data concerning the psyche at times t_1, t_2, \dots, t_n respectively. Then psychic determinism may be defined as the proposition that every psyche is a deterministic system, as that term is used by Russell.

The generality of this definition depends upon the freedom that it leaves in the choice of the functional correspondence. The task of psychology would be to discover the nature of this correspondence, the functional relation or "law" by which E_t is determined.

This definition of psychic determinism is more general than anything proposed by the analysts. It is, in fact, so general that it almost forces us to take a deterministic point of view. As Russell has pointed out, if formulas of unlimited complexity are allowed, then any system, whose state at a given moment is a function of certain measurable quantities, must be a deterministic system, must be subject to laws. A definition in such broad terms does not agree very well with the usual conception of determinism. It implies merely that the psyche conforms to laws, which may or may not be too complex for us to discover. In order to make the definition usable, one must add the provision that the laws involved are limited in complexity, capable of being apprehended and written down.

Speaking broadly, all scientific research is predicated upon confidence that the world of experience conforms to discoverable laws. A recent Nobel prize physicist has stated, "One learns to hope that nature possesses an order that one may aspire to comprehend" (13). In the physical sciences, this hope has been richly fulfilled; quite simple laws have hitherto been found to

hold. Does the field of psychology justify a similar confidence? This question cannot be answered *a priori*, and it would be fallacious to argue inductively from the state of the advanced sciences to the future state of psychology.

PSYCHIC DETERMINISM AS AN EMPIRICAL HYPOTHESIS

As mentioned above, psychic determinism has sometimes been presented as an *a priori* necessity and sometimes as a discovery based upon experience. In a passage already quoted, Freud spoke of determinism as an integral part of the scientific outlook on the world. Elsewhere in his writing, he seems to consider it as an empirical hypothesis. He had found that certain neurotic symptoms, faulty actions and dreams could be understood if viewed in the light of psychoanalytic theories. Although the theories applied in particular cases, Freud was unwilling to dogmatize about their more general application :

Does the solution given for faulty and chance actions apply in general or only in particular cases, and if only in the latter, what are the conditions under which it may also be employed in the explanation of other phenomena ?

In answer to this question my experiences leave me in the lurch. I can only urge against considering the demonstrated connections as rare (6).

Freud was quite willing to consider the possibility that other factors, possibly of a physiological nature could explain the same type of phenomena that are dealt with in psychoanalysis. This open-mindedness is shown in the following statement :

If in the demonstrations of faulty and symptomatic actions, we separate the unconscious motive from its coactive physiological and psychophysiological relations, the question remains whether there are still other factors within normal limits which, like the unconscious motive, or a substitute for it, can produce faulty and symptomatic actions on the path of these relations (6).

Recent developments in neurophysiology have suggested that there may be "still other factors" of a physical nature which provide the mechanism for random mental activity. While it is not within the scope of this paper to present these mechanisms

in detail, one of them will be discussed briefly.

A PHYSIOLOGICAL BASIS FOR RANDOM EVENTS IN THE BRAIN

Eccles(2) has stated that there are vesicles on the axon side of the synapse which apparently contain a "transmitter substance." These vesicles are so tiny that, in accordance with the Heisenberg uncertainty principle, their location is uncertain during any one millisecond. Changes in the location of these vesicles could have an appreciable influence on the excitatory efficacy of the synaptic knob. If the recipient neuron is poised at a critical level of excitability, then this "influence" could raise or lower the probability of trans-synaptic firing. A discharged impulse would in turn have an excitatory influence upon hundreds of thousands of other neurons within 20 milliseconds. Thus, at any instant, the "critically poised" neurons would serve as effective detectors and amplifiers of random events at the synapse. Here is a possible mechanism whereby random alterations may occur in the patterns of cortical excitation(1).

If one accepts the view that mental phenomena are correlated with the patterns of cerebral activity, then the existence of random factors in neuronal excitation could have profound implications for psychology. Does the flexibility and unpredictability of human thinking depend, to some extent, upon chance occurrences in the brain? Does the brain contain a "Maxwell's demon" whereby random, kaleidoscopic patterns are sorted out and used in the service of biological needs? Is there a normal equilibrium between random and non-random activity, which is disturbed in psychiatric patients? These are a few of the questions that arise when one considers the possibility that cerebral activity is partially randomized.

If psychic determinism is viewed not as an axiom but as a hypothesis based upon experience, then it must be subject to change in the light of new discoveries. As Rado has foreseen, a statistical point of view may some day replace determinism in the realm of psychology.

SUMMARY

Psychic determinism is a basic tenet of psychoanalysis. It is commonly defined as an application of the causality principle to psychic occurrences. Causality, however, is no longer accepted as a basic postulate in the advanced physical sciences. This dilemma is recognized by the psychoanalysts, who nevertheless would prefer to retain a deterministic point of view.

Psychic determinism may be defined without reference to causality, by using the mathematical concept of a function. Whether or not the psyche is a deterministic system, in the mathematical sense, cannot be decided in the present state of our knowledge.

Regardless of the definition chosen, psychic determinism is best regarded as a working hypothesis, which cannot be established on *a priori* grounds.

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THE USE OF SEPARATION AS A DIAGNOSTIC MEASURE IN THE PARENT-CHILD EMOTIONAL CRISIS^{1, 2}

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For almost three decades, pediatrics, child psychiatry and child welfare have been influenced deeply by the discoveries of damage in child development through traumatic separation. As a consequence of discoveries such as those of Bakwin(3), Spitz(4, 5) and Bowlby(6), there has been a considerable reaction against procedures in medical or social service which separate children from parents or their surrogates. Doctrines in child welfare have tended to abolish institutional care of infants. During the past few years, the number of children in foster care has decreased from 27,000 to 7,000 in Philadelphia, while the number held together in families by A.D.C. grants has been increased to 44,000 in Philadelphia. Further confirmation of this belief in damage to child development through traumatic separation was found in the situation of most state institutions for mentally defective and emotionally disturbed children. With inadequate staff and facilities, poor intake and admission policies, an increased number of children were "dumped" on them for care, creating a static population of children who could not be returned to the community.

Most hospitals for children have been less affected by doctrines but in most instances have relaxed former restrictions on visiting and have emphasized adequate preparation of children for anesthesia and operations. When the child is an outpatient in a general or a children's hospital, it is seldom that emotional disturbance is considered as potentially benefiting from inpatient study, and until recently there has been general reluctance to hospitalize children except as a last resort.

It may be supposed that the combination of doctrines against separation and current experience in mental and general hospitals,

have tended to militate against the development of any constructive doctrine of therapeutic hospitalization or separation as a tool for the study of highly disturbed family interaction.

In brief, then, theory and practice seem to have led to a viewpoint that equated separation of child and parent with traumatic consequences. Separation for psychological reasons was the end of the road, and hospitalization was the final stage of poor prognosis. The need to maintain the child in his home, to keep families intact, to keep a marriage together, apparently acted to obscure the facts pointing to an opposite course of action. The possible causes of the trend appear to be less important than the negative value given to separation. This view did not allow for such considerations as partial relief to the vicious cycle of parent-child destructiveness: the positive value of hospitalization; allowing child and parent to be away from each other in order to reorganize themselves constructively for future family living(7, 8); and to give opportunity for a family to test out their capacities to support each other or to find their incapacity to do this.

The intent of this paper is to examine this doctrine of separation in the light of our experience and to propose further exploration of the value of timely and structured separation of child and parent in an emotional crisis. From our experience over a 10 year period, we discovered the operation of a doctrinal paradox. On the one hand, we were supporting and teaching the value of maintaining child and parent unseparated. We proposed lessening restrictions on parent visiting in Children's Hospital of Philadelphia, and pressed for greater liaison among the parents-child-hospital-physician group. We subsidized a casework program in the hospital, in order to aid (among other things) the parent in remaining related to the child in the hospital and to assume increased responsibility for preparation of the child for medical

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²Based on the concept of "Crisis," as described by Lindemann, Caplan *et al.*(1, 2).

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and surgical procedures. We indoctrinated pediatric residents to the end of preventing damage to child development through traumatic separation. At the same time in our community child guidance clinic, we attempted to treat severely disturbed children and their parents in the home. In our attempts to treat the severely disturbed child in foster placement, we avoided hospitalization. We failed to consider, in consultations with child care agencies, the possibility that the disturbance was greater than the agency should attempt to manage. We shared with the school a belief that the school should provide for all levels of disturbance. In brief, this was a trend in the direction of avoiding separation of child and parent.

On the other hand, we found ourselves involved in a series of experiences which indicated a shift in the direction of practice. In individual cases there seemed to be value in temporary separation between the child and parent involved in an emotional crisis. It is our belief that brief review of these experiences may be of value in the further exploration of the notion that separation of child and parent need not be a traumatic or destructive experience in child development.

The pediatric care situation in Children's Hospital of Philadelphia has been an interesting laboratory in which to evaluate the paradox of doctrine and practice which has been suggested. Over the years, parents were involved to a greater extent in the total management of the hospitalized child. As parents ceased to be seen as foreign bodies, whose only intent was to delay nurses' procedures, cause infection, badger physicians, and destroy the value of the housekeeping staff, the management of the child in the hospital became easier. The child with rheumatic fever became more tractable in following the regimen of rest, once he became assured through experience and help that his parents had not abandoned him; the child on a deprivation diet, for medical studies, was able to tolerate his anxiety to a great extent with parental help and involvement; the child receiving anesthesia responded to smaller doses of the anesthetic and arrived more readily at a relaxed stage when adequate

support from parents was facilitated. In brief, a child was better able to manage his fears of abandonment, mutilation or injury through greater parent involvement and participation in the process of hospital care. However, there were exceptional situations in which continued visits of parents did not bring about a more tractable or better adjusted child. In the past the parents were told, in essence, that they were bad for the child and should not visit. In these situations, temporary relief was obtained, in that the child became more tractable, but in some situations the hospital ended up with apathetic, listless and withdrawn children, an abandoned child, or a child who showed greater long range disturbances. We discovered that structured, non-punitive, and participating separation of child and parent and separate assistance to each would permit the emergence of constructive experience for both parent and child.

The case of Gary B. parallels other situations of similar nature though in children with other illnesses, and seems sufficiently typical to illustrate the generic situation and its constructive possibilities.

Case 1: Gary, a 27-month-old white boy was hospitalized for about 4 weeks, following the initial presumptive diagnosis of early ulcerative colitis. The pediatrician prolonged hospitalization to explore both the physical and emotional aspects of the presenting problem in Gary and his family.

Arrangements had been made for Mrs. B. to sleep in the hospital with Gary. As a result, Mrs. B. seldom left Gary and Gary almost never left his mother. Mrs. B. was cooperative in allowing all necessary medical and nursing procedures to go on, but dominated the perception of the child and his condition by her many fears and pressures. The child seemed to perceive all values in the same way as his mother. The continued presence of Mrs. B. made independent evaluation of Gary's status with respect to play, sleep, peer relationships, adult relationship, eating, toileting impossible. The frustration to all personnel, from pediatric residents to housekeepers, was so great that they were ready to punish Mrs. B. The theoretical and practical issue was whether this tight union of Gary and his mother was an authentic defense against the anxiety of the illness and hospitalization, or

whether it was representative of an enduring pattern which was one of chronic infantilization, essentially depriving the child of ego nurturing. Were we dealing with constructive support to the child or a pathological regressed symbiosis?

It was decided to confront the parents with the diagnostic necessity of, and a plan for, temporary structured separation. Anticipating the parental reaction to separation, we discussed with them their views with respect to emotional factors as a part of Gary's illness. Both parents had been quite defensive about any such consideration previously, with the mother's attitude stronger than the father's. The father and mother, age 37 and 32 respectively, prior to this event had given histories of "normal and usual" childhood and adult experiences: completely "normal and usual" experiences in their 11 years of marriage; completely "normal" development of Gary. Normal despite a history of: sterility that existed in the first 5 to 6 years of marriage, followed by conception of a girl (age 6); and infertility for 2 years following this, ending in conception of Gary. They had resided with Mrs. B.'s mother for all 11 years of marriage and in the same house in which Mrs. B. was reared as a child. At age 27 months Gary was on a diet of baby food, held in his mother's lap for bottle feeding, did not talk very freely, and was extremely shy of strangers and children.

As Mrs. B. explored the possibility of separation, she reiterated her fears that Gary might climb out of the crib and get hurt, get into things that he shouldn't, go to the bathroom and tamper with things; he might feel lonely and angry and resent the attentions of the professional staff. With support and realistic reassurance, Mrs. B. was able to prepare Gary for this separation.

A separation was achieved in this structured way and it was possible to evaluate Gary more realistically. His reaction to separation was minimal. He cried when his mother left him at the elevator and was mildly depressed for a few minutes. He expressed anger when his physician started to leave him, he clung and kicked at a nurse but quieted down and played subsequently. He was now ready for diversification of foods and more systematic self feeding. Psychological tests could be done, and he achieved an I.Q. of 118. Medical procedures could be accomplished in a shorter

time and with less upheaval than before. Through introduction to play groups of peers and through adult relationships it was possible to evaluate his capacity for object relationship beyond his mother. The separation demonstrated a developmental spurt rather than regression.

For the mother, the separation resulted in self-confrontation with the relevance of her fears. She began to perceive her own infantile self image and her sense of inability to perform as her husband wished. She was prepared for seeing the developmental spurt in the child when she began to visit again. Thus she was able to grasp that her own defenses against mature expectation of herself, projected upon the child, resulted in infantilization of the child.

This type of crisis situation(2) is becoming more common. We are now seeing an increasing number of severe psychosomatic conditions in very young children. The pediatrician confronted with a worsening ulcerative colitis in a young child may find that the doctrine against separation plays into fixed defenses of parents. Under such conditions, it frequently happens that the parental neurosis is made worse by resentment on the part of physicians and hospital personnel toward the mother's implication in the crippled developmental capacity of the child. In general, we speculate that the threat of hostility directed at the mother increases her need to perceive the child as helpless and oppressed while increasing her defenses against psychogeneity of disease in the child since this is equivalent to an accusation of inadequacy. The maternal hostility increases toward aggressive manifestations in the child, thus increasing the intensity of the psychosomatic symptom. The structured separation breaks into the total circular interaction allowing non-defensive assessment of the situation and the breakdown of systematic projection of maternal defenses upon the child. It should be emphasized that punitive separation would be likely to be traumatic on both sides. Thus, in hospital practice, as a usual condition, close relationship in visiting is mutually supportive to the child's capacity to bear stress and to the parental ego adequacy. Exceptions

to the rule indicate that separation of special type may be necessary in order for the experience to become supportive. It is characteristic today to find that the developmental crises of young children and parent-child interaction involve the pediatrician and pediatric facilities in such a way that failure to comprehend the proportions of the crisis and to use separation as a form of preventive intervention will probably result in a worsening situation. It is this situation which fulfills the elements of a developmental crisis in that at the time of a critical period or event, there exists the possibility of definitely improving or worsening the developmental situation.

In a similar manner, the spontaneous behavior of certain families and children in a crisis of acting out afforded us opportunity in the outpatient setting of the Philadelphia Child Guidance Clinic to further understand the dynamic possibilities of structured and timely separation.

The case of Larry J. illustrates a situation in which there were recurring crises and in which no intervention was possible until separation was forced by the action of the child. In this case, 4 different attempts to secure help from a psychiatric outpatient clinic for children failed apparently because the possibility of separation was not considered.

Case 2: When Larry was 5½, the case was referred following a major fire set by the child in the living room of his house. In an initial interview the mother described the child as having been irritable and bad tempered since birth and gave a history of breaking him of temper tantrums by whipping. She also broke him of head-banging punitively. The mother described herself as frequently ill, needing rest and needing to ask others to look after the children. (There was a girl of 1 yr. at this time.) She described this patient as always after her to do things for the younger child and not letting her sleep or rest. The mother failed to show up for subsequent appointments and found numerous excuses for not continuing in response to follow-up phone calls.

Over the next 5 years the mother made 3 more appointments on an emergency basis but did not continue with her intention until the last, at which time the child was 11½. By then, his case had involved the school through

learning and truancy problems; a protective agency had had several contacts because of cruelty complaints and several other psychiatric facilities had been through a similar experience as that of our clinic. Larry was now described as seclusive and untouchable, enuretic, taken to alternately looking after his siblings and then withdrawing, often a truant.

In the course of therapy he was withdrawn as long as his mother was adequate and supportive. At the point where she would become ill, he would minister at first to all her needs and take care of the other children. Following several days of this, he would suddenly show disruptive behavior in school and run away from home. Essentially, there was no accessibility to treatment until the mother showed herself unable to carry parental responsibility. At this point the child would flee the home. The case terminated when he precipitated institutionalization by running away for a protracted period and showing massive disturbance when apprehended.

The record in this case was distinguished in that at no time was the mother offered the possibility of separation from the child.

In this case as in many similar ones, the presenting symptoms brought to the psychiatric clinic for children do not represent an average neurotic interaction in which the application for service is an emotionally responsible and relatively mature move on the part of the parents. It is rather that the acting out behavior of the child is hostile and destructive and so induces awareness in the parents of their own hostile, destructive impulses. Application for service represents flight from the situation and defense against the strong negative impulses.

The original common elements of the cases are almost standard. Both father and mother have histories of emotional deprivation. Marriage seems adequately fulfilling until the birth of a child. The pregnancy and early child care experience increase the mother's anticipations of excessive output and little reward. She is inconsistent in her mothering and increases the demand for care from her husband. He takes emotional flight from her demands and rage reactions. She now perceives the child as the object from which stems her sense of being treated unfairly and reacts with increasing rage to the demands of the child, with intermit-

tent periods of guilty over-compensation in giving to him. The mother and child then alternate between closeness and infantile giving to one another and sudden rage reactions to frustrated expectancy. Physical violence on the part of the mother in early punishment predicts overt destructiveness in the acting out of the child.

Such cases tend to seek clinic help after a particularly frightening act of the child. The repressed wish in the mother is to receive rather than give, to flee the care of the child and avoid guilt, and to flee her own impulses of retaliation toward the child. The tendency on the part of professional personnel to promote family unity is experienced by the mother as a further aggravation and demand. Primarily she seems to need immediate relief of guilt in order not to continue her flight. It appears to us that the doctrine against separation has acted to prevent the possibility of intervention in the case.

One of the more important therapeutic trends has been that of better understanding of counter transference phenomena and the impact of such factors on the outcome of almost any operation with patients. In this sense, it seems likely that the doctrines against separation have added to the counter transference factor operating against separating child and parent. The case of Jackie W. illustrates these points.

Case 3: This 12-year-old boy had been the object of numerous psychiatric studies and attempts at treatment in the preceding 4 years. The history resembled that of Larry J. There had been recurrent crises of fire setting, runaway behavior, school problems, overt theft, which came to a head in family violence. Mother and father were disturbed and had histories of emotional deprivation. The mother dominated the family.

Psychiatric inpatient care had been recommended several years before but had not been accomplished. Unfortunately the dearth of adequate facilities seemed not to allow the placement, though there were undoubtedly reinforcing factors.

We decided to attempt outpatient treatment with an arranged understanding that inpatient treatment and separation should be considered immediately if difficulties arose. In treatment the boy became resistant while at the same time the mother became more openly author-

itative in her expectations toward the patient and toward her husband. The therapist expressed the idea to the caseworker seeing the parents that a crisis might be in the making again. This idea was not well received but the patient took matters into his own hands. He precipitated a severe crisis at school and the school administration moved quickly to place the boy in a residential school. When the therapist supported the school in this move, the caseworker was dismayed and surprised. She claimed no basis for expecting this, despite previous dictation in the clinic record indicating that separation should be considered in the event of another crisis.

In the separated situation, 3 clear diagnostic factors emerged which had been previously concealed. The boy, with whom treatment was continued, became highly verbal and revealed a secret sense of special responsibility for his mother's welfare. Away from her he forgot his rage at her rejection of his masculinity and remembered that she was easily lost, and worried about her.

Essentially there was revealed in both mother and child a tender and highly sexualized fantasy construction of the other which opened the door to understanding of the tremendous anger acted out when the fantasy proved inconsistent with reality. During the first week of separation the mother wrote 12 letters to the boy reminding him they could be together by praying at the same time every night.

The other concealed factors in this family interaction came to light when the father, receiving from his adolescent daughter the understanding of his needs rejected by his wife, acted out incestuously with the child.

This case served to considerably strengthen our conviction that separation should be more often selectively considered as a matter of choice rather than waiting for the case to force the issue as a matter of ultimate bad prognosis. It was clear that prognosis was bettered through separation and equally clear that counter transference attitudes reinforced by the doctrine against separation was a real factor in the management of cases of this type.

Our findings were interesting enough to apply in a different type of situation,

which still had the child as an object upon whom disturbance could be projected and displaced. In this situation, we were attempting to study gastrointestinal symptoms in infants under 6 months of age, as reflections of disturbed mother-infant interaction. The problem posed was one of attempting to determine the primary cause: were symptoms primary or secondary to mother's disturbance? was the infant's activity autogenic or reactive? A project was evolved and continued for 5 years, in which an open-ended hospitalization of the infant was attempted, with possibilities of both physical and emotional factors as etiologic; continued observation and study in a neutral environment; structured 48-hour separation of infant and mother in the first 2 days of hospitalization; interviewing the mother on each of the days of separation, and tape recording each interview. Not only was this structured separation useful in determination of the clinical resting state of the infant, but it also acted as a vivid stimulus in tapping the entire area of maternal disturbance.

The following two cases are illustrative of some of the findings of this project:

Case 4: Doris A., a 3-months-old Negro female was the third child of a 24-year-old mother and a 61-year-old father. Pregnancy was complicated by vomiting; labor and delivery were uneventful, with no neonatal difficulties. Doris was breast-fed and began vomiting at 1 week of age continuing until the present. Supplemental feedings were added, formulas were changed, sedatives and antispasmodics given, but to no avail. Vomiting continued on milk, water or solids. In addition to the vomiting, a history was obtained of irritability, crying and inability of the mother to soothe the child. Hospitalization with structured separation was arranged, and as with many of the babies in the project, vomiting ceased within a day or two while maintained on the same formula as prior to hospitalization, irritability diminished, and all studies including C.B.C., urinalysis, g.i. series, stool examination, were within normal limits. During the interviewing of Mrs. A., a picture emerged of a woman who was literally pouring herself into the infant; unconsciously Doris had become the means of proving to the world, Mrs. A.'s family and herself, that she (Mrs. A.) could be a more adequate mother

than her own mother; with much of this related to her own deprived childhood, need for dependence, and therefore an early marriage to an older man who required more than he could give, and a history of psychotic breakdown in the 2 previous pregnancies.

Case 5: Charles K. was a 4-month-old white boy, the only child of a 19-year-old woman. His father had been killed in an automobile accident when Mrs. K. was 8 months pregnant. Pregnancy was complicated by repeated attacks of cholecystitis and depression. Labor and birth were uneventful, with no neonatal difficulties. Ever since Charles was one week of age, vomiting has been a problem. Frequent formula changes and a previous hospitalization in another institution did not alter the picture. Hospitalization with structured separation was arranged. All studies were negative, the baby did well, and vomiting was quite slight. During the initial separation interview, Mrs. K. reported a dream of the previous night in which she felt that she had to give Charles away or he would starve to death. A picture emerged, in the interviewing, which very much confirmed her dream. Unconsciously she was literally feeding on the infant herself; by projection and displacement he had become her replaced husband; he carried many of his father's features and personality; he became her sole means of comfort as Mrs. K. would hold long discourse with him about her loneliness and pain.

CONCLUSIONS

As a result of these experiences, we are convinced that a valuable diagnostic tool has been overlooked in child psychiatry. We decided to set up an acute inpatient service for pre-adolescent, emotionally disturbed children, based on the notion that a short period of carefully structured separation at the time of a crisis may be a valuable diagnostic tool in permitting a more intensive and extensive evaluation of intrinsic problems in child and family. It should be emphasized that this notion does not negate the general principles of support for children to live in warm family relationships rather than apart from them. However, this notion does allow for exceptions to the rule; all children are not best off in their own families; structured and realistic separations are not inevitably traumatic and the door is open to the temporary separation of children with hospital placement as a relieving and elective diag-

nostic tool rather than inevitably as a last resort.

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THE DISTRICT BRANCH OF THE APA: ITS ORIGIN, PRESENT STATUS, AND FUTURE DEVELOPMENT¹

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Founded in 1844 as the Association of Medical Superintendents of American Institutions for the Insane, continued from 1892 to 1921 as the American Medico-Psychological Association, the American Psychiatric Association is the oldest medical organization of national scope in North America. It has a history of which its members can justly be proud, for it has continuously served to advance the most enlightened treatment for those suffering from mental and nervous disorders, and has maintained from its beginning an authoritative position in the continuing effort to improve the treatment of the mentally ill.

In the beginning, it appears that the Association had little, if anything, in the way of a written constitution or by-laws, although the objectives seem to have been well understood. The 1892 Constitution stated, "The object of this Association shall be the study of all subjects pertaining to mental disease, including the care, treatment and promotion of the best interests of the insane." This same wording, with the words, "epileptic, feeble-minded and allied classes" added, was carried over in the revised constitution adopted in 1921. The present wording of Association objectives was adopted in 1933, and reads as follows,

(a) to further the study of subjects pertaining to the nature, treatment, and prevention of mental disorders; (b) to further the interests, the maintenance, and the advancement of standards of hospitals for mental disorders, of outpatient clinics, and of all other agencies concerned with the medical, social, and legal aspects of these disorders; (c) to further psychiatric education and research; (d) and to apply psychiatric knowledge to other branches of medicine, to other sciences, and to the public welfare.

In order to carry out its objectives, the Association has always depended largely upon its members working in committees and as individuals on specific assignments. At first, the members were very few in number and organizational problems were comparatively simple. Starting with the original 13 Medical Superintendents, growth during the ensuing 4 or 5 decades was slow. By 1892, however, its size had increased to about 250 members. At this time, the membership designation "Medical Superintendents" was changed on the Association Roster to "Members" and Assistant Physicians in mental hospitals were for the first time eligible to be called "Associate Members"(1). A second important change in this respect occurred in 1921, when physicians other than those practicing in institutions for the insane became eligible for membership(2). At the same time, the category of "Fellow" was established, and those previously called "Associate Members" became "Members." To be sure, these changes reflected the tempo of the times, especially the fact that, following World War I, increasing numbers of psychiatrists began to practice their specialty outside the confines of a mental hospital. This embracement by the Association, of all psychiatrists, no matter what their individual interest—be it adult or child psychiatry, psychoanalysis, forensic psychiatry, or any other acceptable form—had profound effects. In 1921, when the Association adopted its present name, there were about 1,000 members. In 1934, the year after the category of "Associate Member" was re-established, there were 1,604; and by 1944 this had increased to 3,387. Following World War II, the growth curve of the Association rose steeply (see graph) and as of May 1958 there was a total of 10,536 members of all classes. Indeed, it is this very growth and the resulting complexity of demand and responsibility thrust upon the Association that has made the District Branch and the Assembly of District Branches not only a

¹ Read at the Milwaukee Neuropsychiatric Society, March 18, 1959. Revised May 15, 1959.

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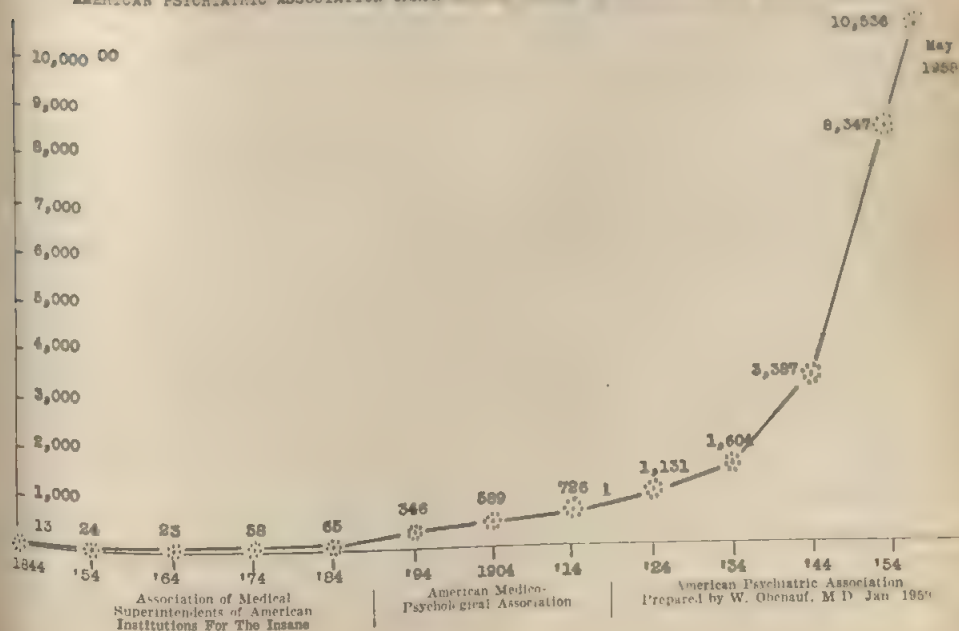
logical step but also a necessary development.

From 1844 to 1891, all committees reported directly to the Medical Superintendent, gathered at the annual meeting. Since 1892, the Association has been governed by an elected Council, which receives all committee reports and makes recommendations to the membership at the annual meeting. That this system has prevailed for so long a time is a tribute to the wisdom and devotion of the many distinguished Fellows of the Association who have labored through the years to carry on the work of the Council; theirs has been a labor of love often carried on at considerable personal sacrifice with their chief reward being simply the satisfaction of their accomplishments; and perhaps, the applause of their fellow members. Nevertheless, it became increasingly difficult for this small group of individuals to reflect the feelings and wishes of the membership, and rumblings of discontent began to be heard with increasing force.

The Assembly of District Branches as now constituted has been the outgrowth of various arrangements that have been tried. In 1927, as a result of the Presidential address given two years earlier by William

A. White, the by-Laws were amended to provide for "Sections" as well as for "District Societies" of the APA. The "Sections" were to be any National Society with similar interests who wished to become an organic part of the Association. Provision was made to assimilate their treasuries as well as their memberships but non-APA members were to be kept on a separate list and they would have no voice in the affairs of the Association. This arrangement soon outlived its potential usefulness, however, and it was abandoned in 1936. The "District Societies," on the other hand, beginning with the Massachusetts Psychiatric Society in 1931, flourished - perhaps due to the degree of local autonomy they enjoyed under Section 2, Article V of the by-Laws, which stated: "Local organizations shall be allowed to include members who are not eligible for membership in the Association and shall in general be allowed a wide latitude in their organization." The benefits looked for from the District Society were summarized by President Kline as: 1. To provide information regarding candidates for membership in the Association. 2. To stimulate the holding of more frequent sectional meetings so that members could

AMERICAN PSYCHIATRIC ASSOCIATION GRAPH SHOWING GROWTH OF MEMBERSHIP ALL CLASSES



be more active; 3. And to stimulate interest in psychiatry(3). It seems fair to say that these benefits were felt, and that they continue to be felt through the "Affiliated Societies" under which designation these organizations have continued to function since 1936. At that time as already noted, the "Sections" previously authorized were abolished, the designation of the "District Societies" changed to "Affiliated Societies," and a new category created to be called "District Branches." President Cheney had this to say at the annual meeting held in St. Louis when the changed designations were submitted to the membership for approval:

Briefly, if I may interpolate, these amendments change the designation of what has previously been called a district society to that of an affiliated society, such societies being made up of other than members of this Association. Under the present Constitution, these are district societies that are composed (not only) of persons who are members of this Association but also (those) who are not members. It has been difficult to handle that situation and the Council has given careful consideration to the matter of having such societies called district societies. The provision is made by this amendment to have, therefore, affiliated societies.

It would seem that any organization that was a district branch of an association such as this should be really a part of the parent body and be composed only of members of this Association. The term affiliation does not indicate that an association or society is a part of the parent body. On the other hand, the amendments provide that where groups of Fellows or Members of this Association wish to organize into local or district societies, provision can be made and they will be called district societies, but they shall be limited always to members and fellows of the Association(5).

Thus, the formation of "District Branches" as we now know them has been possible since 1936, but no reaction in the way of effective organization occurred for some 12 or 13 years.

The 1930's and 1940's saw great changes in the practice of medicine, including the specialty of psychiatry. Gradually, the structure of the Association began to be questioned with respect to whether it could meet the challenge of the times and pro-

vide the leadership expected by its members. There was a suspicion on the part of some that the Association was being controlled by a small autocratic group, to whom the wishes of the membership were not known; or if known, were largely being ignored. An Association report concerning this period states:

In December 1944, at a meeting of the Council of the American Psychiatric Association in New York, vigorous protest was made by various members of the Association regarding the failure of the Association to assume leadership in the field of psychiatry, to support the psychiatric work in the Army and Navy, to assist members in the improvement of their state hospitals, to further psychiatric education, and many other things(6).

A committee, under the Chairmanship of Doctor Karl A. Menninger, was appointed by President Karl M. Bowman and a most exhaustive study of the problems involved was carried on over a period of several years. The result was a comprehensive plan submitted in 1948, which would have abolished Council and set up a House of Delegates, with the executive function to be vested in a Board of Trustees.

This proposal stirred up enormous controversy and for a time a separatist movement seemed to threaten the unity of the Association. As stated by Doctor Harry C. Solomon in his Presidential Address of May 1958:

Those who were most concerned with and active in the Association's affairs tended to split into two factions. One group, many of whom were associated with the Group for the Advancement of Psychiatry, formed shortly after the War, were strongly in favor of the reorganization plan feeling that it would bring new life and leadership to psychiatry. Another group, many of whom were associated with the Committee for the Preservation of Medical Standards in Psychiatry, was more or less unalterably opposed, fearing that it would destroy cherished values, policies and procedures(7).

Under the circumstances at that time, no action on the plan was possible and only minimal changes in the Constitution and by-Laws were made in 1950. By 1952, however, tempers had cooled and it was then

possible again to amend Article V of the by-Laws and thereby to create the Assembly of District Branches and for the first time to give some real purpose to District Branch formation.

Until the Assembly came into being, the Affiliated Society held sway on the local scene, and for many years to the complete exclusion of the District Branch. This is not at all surprising, since the Affiliated Society had almost complete autonomy over its own organizational affairs, the District Branch on the other hand would be required to limit its membership to those physicians who belonged to the American Psychiatric Association. It was not until 1949, and then no doubt stimulated by the report of the Committee on Reorganization, and in anticipation of organizational change, that the first two District Branches were formed and recognized—the Pennsylvania District Branch (including the State of Delaware) and the Mid Continent District Branch (including the States of Kansas and Missouri). The authorization of the Assembly, however, provided the key that had been missing. Immediately, interest in the formation of District Branches took a sudden surge forward. Thus, at the time of the first meeting of the Assembly in Los Angeles in May of 1953, there were some 16 District Branches in being and all sent a representative to participate in this historic event.

There has been rapid growth since that time and some 49 District Branches are now in existence within whose territorial limits over 95% of all APA members live and work. Each District Branch elects a Representative to the Assembly, whose voting strength is in proportion to the number of members he represents (one vote for each 20 members; fractions of 20 not counted). The elected Officers of the Assembly consist of a Speaker, Speaker-Elect (now called Deputy Speaker), a Past Speaker, a Recorder (or secretary); and 5 members of a Policy Committee, selected from Five Areas by caucus at the annual meeting on a staggered basis to serve terms of 2 years. The place of the Assembly in the Association now seems secure, and its importance in the determination of policy becomes stronger each year. Indeed, Council has come to depend on the Assembly

for advice in ever increasing degree before taking action on any matters of major policy.

During the coming year, further amendments to our Constitution and by-Laws will be submitted for approval of the membership. These would consolidate the gains made thus far and authorize "approved" District Branches to act in the name of the Association with respect to new membership applications from within their territorial limits (provision is made for "membership-at-large" in certain situations). Because of this growth and development of the District Branch Movement, there seems to be no doubt that in time the original plan of the Reorganization Committee headed by Doctor Karl Menninger will, to all intents and purposes, be fulfilled.

Let us now turn to some of the problems inherent in the present state of District Branch development, and discuss one or two areas in which improvement might be made in order to carry out better the objectives of the Association, of the Assembly, and of the individual District Branch. The Assembly of District Branches has defined its purpose as

to represent and serve the needs of the District Branches in their relationship to the governing bodies of the APA and to represent the governing bodies of the APA in their relationship to the District Branches.

The purpose of the District Branch is stated as follows:

to represent the local psychiatric profession in the American Psychiatric Association through its delegates to the Assembly of District Branches. The District Branch will foster the progress of psychiatry, represent psychiatry in the designated local area and assist the American Psychiatric Association in promoting its aims and objectives(8).

It is my belief that the Assembly is now fulfilling its objectives in a very satisfactory manner. We do have under continuing study certain features, however, such as the possibility of improving our method of distributing voting power among the District Branch Representatives (for instance, should District Branches that have

more than 200 members be allowed more than one representative?).

With respect to the District Branches, there is likewise cause for much satisfaction. The local member is taking an ever increasing interest in the affairs of the Association. There is much improved liaison between committees working on the local scene and committees performing a similar function for the Association; and most importantly, the local member can at last, through his representative to the Assembly, have his voice heard and his opinion felt in our highest Councils. Nevertheless, there is still much room for improvement.

The representation of psychiatry in a really satisfactory and simultaneous way at both the state and local levels is one of the important areas now in need of study and action. Considerable thought has been given to this matter, and two possible solutions have been offered.

One of these is already in operation in the State of New York. There, the 10 District Branches now in that state have formed a "Committee of Delegates" composed of the Representatives and Alternate Representatives to the Assembly from the various District Branches. They get together at least 4 times a year and act for the profession at the state level. Apparently they are at present quite satisfied with the arrangement, although it has been in operation only a year or so. However, New York is unique in that it has over 1/5th of all APA members presently living and practicing within its political boundaries and for this reason has been given the status of "Area" in the organization of the Assembly. Most other states have but one, Indiana and Missouri have 2, and California has 3 District Branches. On the other hand, the Northern New England District Branch encompasses 4 states, the Intermountain District Branch has 7, and the North Pacific District Branch includes 3 states and one Canadian province.

The other suggestion regarding an arrangement whereby both local and state-wide responsibilities may be met, is one for which I have been responsible. It concerns the possibility of maintaining the size of the District Branch to coincide with state boundaries whenever there are enough APA members (such as in the State

of Wisconsin) to make this feasible. This might bear some similarity to the way the American Medical Association is subdivided into State Medical Societies. The District Branch in turn could be subdivided into local units which might be called "Chapters," much as the State Medical Society is subdivided into County Units. Members of the "Chapter" would also be members of the District Branch, and of course, of the Association. Each "Chapter" would elect its own officers, arrange its own programs, provide for its own expenses and send representatives to a "Council" or "House of Representatives" of the District Branch. Its members would be eligible for election to office in the District Branch. The local "Chapters" would possibly have meetings at monthly intervals, whereas the District Branch might have one or two meetings per year to put on scientific programs, to act on matters considered by the District Branch Council between meetings, to elect officers, and to consider instructions to be given the Representative to the Assembly.³ In this way, both local as well as state-wide and Association needs could be met. It seems to me that such an arrangement also has the advantage of giving the local member more to stimulate his interest—if he is so motivated, he can aspire to office on the local, the state, or the Association level. The increased opportunity for experience in organizational work could have great value, not only to the individual member that wants to enlarge his horizons but to the Association as well, where new talent is always needed and welcome.

We should act reasonably soon, in my judgment, to resolve this problem of state-wide and local representation and organization.⁴ Of the 49 District Branches, some 29

³ As noted earlier in this paper, study is now being given to the possibility of allowing more than one representative from a given District Branch under certain conditions. If the "Chapter" arrangement is adopted and if multiple representation in the Assembly eventually is permitted, the writer would favor having each Representative to the Assembly selected in part on the basis of geography. In this way he could be responsible personally to the membership in his territory as well as to the District Branch as a whole.

⁴ At the 1959 Annual Meeting in Philadelphia,

are now organized along the political boundaries of a single state, province or territory. In several of these—and in time no doubt in most—there will be a desire on the part of local groups to set up their own societies and thus “splinter” the existing District Branches into ever smaller units. Wisconsin is one example of where I have heard about discussion of such a movement. The inevitable result of such “splintering,” if allowed to proceed too far, would be an Assembly too large for effective action; and at the state level there would be increased difficulties with respect to coordination of effort, if not outright hostility and disunity between the splintered District Branches. When and if this situation came to pass, the entire structure of the Assembly and its component units probably would have to be rebuilt, possibly along the lines now suggested. Prudence would seem to dictate that we take appropriate action while there is yet time.

Now let us turn to another problem—our relationship as organized psychiatrists to our honored and respected colleagues such as the neurologists, neurosurgeons, internists, pediatricians—those who have been eligible for membership in our Affiliated Societies, but who do not fulfill the requirements for membership in the Association. It has long been one of the strengths of the Affiliated Society that because of its multi-disciplinary nature, a working relationship has been established that is extremely valuable. Through this relationship, the non-psychiatric members add materially to their understanding of psychiatry, the psychiatrist is kept abreast of developments in related fields, and opportunity for collaboration on the professional level is much enhanced. There also results from this understanding and fellowship an

atmosphere in which the support of our medical colleagues comes naturally when we are faced with public issues; an example of this is the legislative efforts of the clinical psychologists at the present time.

From the first it has been hoped that the closest kind of working relationship could be developed between the District Branch and the Affiliated Society. It is felt that both organizations have an important role to play on the local scene, overlapping in many areas perhaps, but each unique in its own way. The District Branch being an organic part of the APA, provides the local member an opportunity to participate in the business of the Association. Through debate and discussion, opinions are formed which can be transmitted through the Representative to the Assembly. The Affiliated Society on the other hand provides a needed relationship at the local level for liaison and organic union with our non-APA medical brethren.

Many District Branches arose in the first place from the membership of the Affiliated Societies. Indeed, the District Branch was often superimposed on the older organization. At the present time, there are 14 cases in which both organizations have been continued having the same officers, holding joint or alternating meetings, and with the closest possible relationship. Local circumstances vary from place to place, however, and here and there the older Affiliated Society has been replaced by the District Branch. In some such cases, the non-APA members have been retained as Affiliates who are welcome to come to meetings, but who have no vote and who cannot hold office. During a period of transition, perhaps a satisfactory solution might consist of maintaining both organizations as separate and distinct units that could have meetings on alternating dates (the scientific and social portions of which are open to members of both), plan their programs together, and share in common costs, such as for Speakers, rentals, etc. In this way, there would be no awkwardness of a non-APA member happened to be nominated for office in the Affiliated Society, and the dues needed might not be much greater than would be required for one Society that did all these things on its own. Another solution might consist of

APA Council adopted a resolution endorsing the encouragement of District Branch organization along State, Provincial or Territorial lines, and the discouragement of “splintering” of District Branches now covering an entire State, Province, or Territory. The Assembly was requested to consider further the concept of “Chapters” within District Branches and to present at a later date specific proposals or recommendations along this line. The subject was again discussed in the Assembly, the idea endorsed in principle, and referred for further study by the separate District Branches and by the Policy Committee of the Assembly.

liberalizing the regulations for membership in the Association itself, so that, for instance, Board Certification in a related medical specialty would qualify a physician for Associate Membership.

In any event, it must be recognized that psychiatrists, like all medical doctors, are busy people and the idea of having two local professional societies with approximately the same membership (75% of the Affiliated Society Members must be psychiatrists) and much the same interests, holding simultaneous but separate meetings just doesn't make sense.

It is my hope that practical adjustments, perhaps along the lines suggested above, can be made so that the benefits peculiar to both types of organizations may continue to be felt. I believe deeply in the democratic process that is made possible by the District Branches, but I also am concerned lest we psychiatrists permit the clouding of our identification in the public mind, and indeed, in the minds of our medical brethren, as Doctors of Medicine. The distinction between a psychiatrist and a psychologist is already a little foggy—and I think that, like a certain political party at this time, we should be giving some thought to the clarification of our public image. In that context, the abandonment of the medical liaison we have developed in the Affiliated Society scarcely seems the thing to do.

I would like to go back at this point and repeat one of the objectives as given in the Constitution of our Association—"and to apply psychiatric knowledge to other branches of medicine, to other sciences, and to the public welfare." If the District Branch is to assist in promoting this feature, it would seem only reasonable that suitable adjustments in its organizational structure should be made. Indeed, it would seem that our membership will have to decide in proper time just which of our stated Association objectives we really want to emphasize. If psychiatry, through the Association, is to provide leadership in the fight against mental illness, it would seem that we will be called upon to do somewhat more than might be expected of an organization con-

cerned only with scientific matters. The relationship between the District Branch of the American Psychiatric Association and the "other branches of medicine, the other sciences, and the public" is involved here, and much study and discussion will be required to provide proper perspective and solution.

SUMMARY

This paper has represented an attempt to summarize the facts pertinent to the development and present status of the District Branch movement that is now progressing within the American Psychiatric Association. Some reflections concerning and suggestions about organization for the effective meeting of local and statewide needs for psychiatry have been offered. The related matter of adjustments between the District Branch and the Affiliated Society has also been discussed and the need for continued liaison with our medical brethren emphasized. It is this writer's earnest hope that he may have stimulated thinking on these matters in some small degree; that constructive and fruitful discussion may follow; that out of collective wisdom flowing from the democratic process, the American Psychiatric Association may continue to maintain an organizational structure that will permit the perpetuation of her status, not only as the oldest Medical Association of National size in North America, but also as the recognized leader in the fight against mental illness as well.

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A CROSS-CULTURAL APPROACH TO MENTAL HEALTH PROBLEMS¹

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Much thought has been given to the definition of the term and to the delineation of the field of *social psychiatry*. According to M. Opler(1), "the impact of social and cultural environment upon the development of personalities is the central concern of social psychiatry." This general description indicates that social psychiatry, in contrast to clinical psychiatry, invariably involves the complicated play of interpersonal relations between sets of individuals, and that it views the behaviour of such individuals against the background of, in interaction with, and in response to their socio-cultural environment. Such approach implies and presupposes a thorough knowledge on the part of the social psychiatrist of the social system in which patients under his observation live, or, more realistically, a close collaboration between psychiatrists and social scientists.

However, because the field as outlined by M. Opler(1)—ranging as it does from marriage counselling to the effect of culture change on mental health—is so wide that no single person can encompass it, it appears advisable to detach *cultural psychiatry* from social psychiatry and to treat it as a separate entity. As such the term cultural psychiatry denotes a field of research which explores the frequency, etiology and nosology of mental illness and the care and after-care of the mentally ill within the confines of a cultural unit and in relation to the cultural environment concerned. The term "culture" has gradually emerged from the studies of anthropologists to refer to a uniquely expressed mode of social life based upon patterns of thinking and acting that reflect overtly and covertly organized feelings and perceptions which are held in common by all the normal members of the community.

As regards the interplay between culture

and personality, the position taken by us can be defined as follows: Certain drives and infantile experiences are common to all human beings though variations in degree and quality occur. Parental values, attitudes and controls which reflect cultural tradition are, by precept and example, implanted in, and incorporated and absorbed by, the ego of the child and form the core of his conscious and unconscious superego. Consequently culture does not only represent the fabric of the ways of living of the society in which we live but it also has its counterpart in our inner world. In line with this argument culture conflict has its battleground in the inner as well as in the outer world.

A still wider vista unfolds if human behavior (normal and abnormal) and any of the areas named are subjected to comparison in contrasting cultures. Because this approach goes beyond the boundaries of one culture, we have called it *transcultural*; its comparative and contrasting aspects have been labelled cross-cultural.

During the last 3 years Dr. Fried and I have been jointly engaged in a transcultural psychiatric study. The aims of this research are to arrive at conclusions regarding which cultural norms make for mental health and which foster the development of mental illness; and by isolating and defining modifiable socio-cultural variables, to work towards prevention, or at least reduction, of mental illness.

SOURCES OF DATA

The data summarized in this paper have come predominantly from correspondence with psychiatrists and social scientists abroad, strategically placed and qualified to be able to give authoritative information. This communication network stretches around the world and has involved over 30 countries.³

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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³ The information thus received was organized in the form of a number of Newsletters (Newsletter—Transcultural Research in Mental Health Problems) sent to our correspondents and available to others interested in the subject.

A SURVEY OF CROSS-CULTURAL MENTAL HEALTH PROBLEMS

Four questions concerning this field of interest which have been raised repeatedly will be taken up successively.

1. ARE THERE ANY SIGNIFICANT DIFFERENCES IN THE PREVALENCE AND INCIDENCE OF MENTAL DISORDERS IN DIFFERENT CULTURES ?

Largely based on rates of mental hospital admissions and hence open to objections regarding their general validity such differences have been reported. For instance mental hospital admissions of schizophrenics according to Ratanakorn(2) amount to 72% in Thailand as against 28.8% in the U.S.S.R.(3) on a survey of 193 Soviet Russian mental institutions. According to several observers, the incidence of depressive psychoses is low among African negroes(5, 6, 7), and among Indonesians(8). The suicide rate is reported high in Japan, Denmark, Switzerland, and in Whites resident in South Africa. It is low in Ireland(9), in African negroes(10), and non-existent in the Bantu. Margetts(11) reporting from Kenya, doubts whether depressions and suicides in Africa are really as rare as is generally believed. According to him "most Africans do not have much of a concept of depression as an illness though they have words for sadness and grief." Rarity of senile psychosis has been noted in Hong Kong (12) and Formosa(13). Also open to doubt is the alleged very low incidence of psychoneuroses in African negroes, Chinese and Indians. It seems conceivable that the scarcity of trained psychiatrists in these countries is such, and the necessity to deal with psychiatric emergencies is so great, that the problem of psychoneurosis, which looms so large in the western world, is of minor importance. The writers from Ireland(9) and Greece(14), in Europe, and an Indian psychiatrist, M. R. Gaitonde(15) in Bombay, are the only ones who report on conversion hysterics in appreciable numbers. Obsessional neuroses have been reported as rare on Formosa(13), in Kuwait(16), and among African negroes(10). The common belief, recently restated by Stainbrook(17) that the high incidence of psychosomatic disorders is one of the doubtful privileges of western civilization is not borne out by Parhad's(16) observa-

tions in Kuwait and by Seguin's(18) and our own observations in Peruvian Indians. Alcoholism is rare on Formosa(13). It constitutes a particularly serious problem in Peru(19) and in the Union of South Africa(10). Sexual perversions have been reported as common in Iran(20), and as rare in Russia(21).

2. ARE THERE ANY MENTAL DISORDERS COMMON IN SOME CULTURES BUT NON-EXISTENT IN OTHERS ?

From what has been said it is evident that the main categories of mental disorders are ubiquitous. Mental disorders confined to certain geographical areas are those due to malnutrition, to malarial and other infections, toxic psychoses, and variants of drug addictions. African specialists have identified what seems to be some mental syndromes indigenous to that continent, e.g. Carother's(4) "frenzied anxiety." Whether this is an organic illness or a functional psychosis is not clear. Only further research on such apparently unique disturbances can prove whether they are cultural variants of known conditions or totally new phenomena.

3. ARE THERE ANY NOSOLOGICAL DIFFERENCES IN THE MANIFESTATIONS OF MENTAL DISEASE ON COMPARISON OF DIFFERENT CULTURES ?

The example of schizophrenia may be given. Observers with psychiatric experience in the East and in the West(22), have noted that hospitalized schizophrenic patients are less aggressive and less violent in India and in Japan than schizophrenics in western mental hospitals. Caudill(23) observed that Japanese schizophrenic patients, more than patients in the United States, maintain contact with other human beings.

Schizophrenia in African natives is said to be quieter and less florid—a poor imitation of European forms(24). Twilight or confusional states, often of short duration, are common. Severe schizophrenics in various stages of deterioration, with marked blunting of affect and poorly organized, autistic thinking, prevail or at least come predominantly under the care of psychiatrists. Most observers agree that the hebephrenic form of schizophrenia is most commonly seen and that the paranoid form

is relatively uncommon. Hallucinations, auditory and visual, are systematized and have a predominantly mythological content. Delusions of being bewitched or poisoned are most common.

4. ARE THERE ANY PSYCHIATRIC SYNDROMES SPECIFIC TO CERTAIN GEOGRAPHICAL AREAS OR CULTURAL CONFINES ?

Such syndromes, to mention just a few, have been described under the names of Koro, Latah, Imu, Arctic hysteria, Youngda-Hte, Hsieh-Ping, Susto and Windigo psychosis.

Patients suffering from *Koro*, a disorder reported from Malaya and Southern China, are suddenly seized by the belief that their penis is shrinking into their abdomen. To forestall such an event which, according to popular belief, would lead to death, elaborate preventive measures are taken, such as clamping the penis into a wooden box or tying a red string around it (12).

Latah has been reported from various parts of the world (among the Malay races, as Imu among the Ainu of North Japan and as Arctic hysteria among Eskimos and Siberian natives). It is usually precipitated by fright, occurs in middle-aged women, and is characterized by a trance-like state with automatic obedience, alternating with motility storms, echolalia and echopraxia (12).

A trance-like state under the name of *Hsieh-Ping* has been reported from Formosa (13). The symptoms during seizures, which last from half an hour to many hours, consist of tremor, disorientation, clouding of consciousness and delirium, often accompanied by visual or auditory hallucinations. An outstanding feature is ancestor identification. Magical and mystical animal transformation states have been reported from Indonesia (8).

Sal y Rosas (25), one of our correspondents from Peru, reports on a condition named *Susto* (magic fright). It is precipitated by a violent fright experience, occurs usually in children and adolescents and is characterized by intense anxiety, hyperexcitability, and a state of depression accompanied by considerable loss of weight. The patients believe that their "soul" has been separated from their body, and has been absorbed and kidnapped by the Earth.

The treatment applied consists of magical acts to recover the fugitive or robbed spirit.

To return to the question raised, it appears that the syndromes described constitute, to some extent, clinical entities, though they are less specific nosologically than is frequently believed. Phenomenological overlap between some of the syndromes described under different names in geographically widely separated areas is noticeable. According to local psychiatric observers, most of the syndromes have been regarded as culture-bound variants of hysteria.

SOME PSYCHOCULTURAL AND SOCIOCULTURAL CONSIDERATIONS

Thus far a brief account has been given of observations which have been made. In appraising their significance, psychocultural as well as sociocultural variables have to be taken into account.

PSYCHOCULTURAL VARIABLES

Obsessional neuroses. The alleged absence of obsessional neuroses in some cultures, e.g. in African negroes (26) and in Chinese (13) could be attributed: to the disinclination of obsessive-compulsives all over the world to consult psychiatrists; to the mitigating effect of lenient early toilet training on sphincter morality development; to externalization of a threatening superego in the form of popular beliefs and superstitions; and to absorption of obsessional defences into culture dictated rituals.

Depression. The rarity of depression, if indeed it is rare, in certain cultures, e.g. among African natives, has been accounted for: by a weak superego formation, by predominance of projective mechanisms and by the prophylactic effect of ritual and ceremonial observances following a death. Contrasting the high incidence of confusional excitement, often combined with homicidal behaviour, and the rarity of depression, P. K. Benedict and Jacks (27) suggest that in non-literate cultures hostility of psychotics is channelled outward, whereas in Euro-American culture hostility is more often directed inward.

Schizophrenia. Divergent views have

been expressed regarding the relevance of Oriental cultures to the incidence of schizophrenia. It has been suggested that the Eastern way of life (a) predisposes to schizophrenia(2) (b) conceals it in prizing and rewarding schizoid trends(28) and (c) safeguards against it by providing outlets for introvert tendencies(29, 30).

Beyond this, it is obvious that the content of schizophrenic delusions is conditioned by culturally patterned orientation and that their paucity or richness reflects the modalities of mental and behavioural activities inherent in diverse cultural systems.

SOCIOCULTURAL VARIABLES

As regards sociocultural variables the effects of detribalization, urbanization, culture change, migration and culture-determined differences in psychotherapy will be briefly dealt with.

1. Observations made in various parts of Africa(31, 7) and in Haiti(32) show that, as rural, backward and tribal native populations enter urban areas, mental disorders increase in frequency and their clinical manifestations approximate those of the European white settlers.

2. There is general agreement that radical culture change is felt by large sections of the affected populations as a stressful experience. A frequent result of stressful experiences of this kind is an increase in antisocial behaviour. However, differing responses to similar experiences have been noted in culturally distinct groups. Thus, in Israel(33), Jewish immigrants from Tunisia have a high rate of delinquency and of other forms of antisocial behaviour whereas Yemenites have a low rate.

Other apparently culture-bound variants of mental phenomena reported in migrants include a high frequency of bronchial asthma in Iraqi Jews migrated to Israel and of generalized, shifting pains in Indians migrating from the Andes to the coastal cities of Peru(18).

3. Crosscultural evidence indicates that differences in culturally based attitudes towards the mentally ill and towards mental hospitals may influence rates of commitment and of release. Irrespective of availability of mental hospitals, there is a high

tolerance in Oriental and African societies for what in the Western world would be considered seriously disturbed behaviour.

Cultural premises influence types of treatment procedures in different cultures. For instance, adherence to traditional systems of values seems to account for the resistance of Japanese psychiatrists to psychoanalysis and their preference for ego-directed forms of psychotherapy founded on established and accepted religious systems. Prominent among these are: Morita-therapy based on Zen Buddhist disciplines and Nishimaru's Confucian based persuasion therapy(34).

Still another aspect of cultural orientation is applied to psychotherapy by Spiegel(35) who showed that the goals of psychotherapy and the therapeutic process as such, are influenced by concordant or discordant cultural values of therapist and patient.

CRITICALLY ASSESSING VALIDITY OF DATA

The general survey given throws into relief the numerous difficulties which beset the student of, and investigator in, the field of transcultural psychiatry, some of which follow.

Variability of the concepts of mental health and illness. While it is difficult enough to agree on what is "normal," "still normal" or "already abnormal" in one's own culture, these difficulties are multiplied if standards of normality and abnormality established in one culture have to be compared with those in an entirely different culture. Application of Western standards of normality by Western psychiatric observers in dealing with primitive societies may result in grave errors regarding the frequency of mental illness owing to ethnocentric orientation and ethnocentric bias.

Moreover, it has been pointed out that historically and geographically disease detection, disease-naming and disease acceptance are conditioned by the prevailing social and cultural systems of medical behaviour(17) i.e. "being sick" is a cultural phenomenon in itself. For instance, shamanism which would be regarded as pathological by us is regarded as normal in the countries in which it is practised and dysmenorrhoea becomes an illness only if the

social system in which the sufferer lives considers having pain with menstrual periods as an illness. As mentioned before, the same argument applies to the absence or presence of depression in primitive societies.

Variability of nomenclature. Visitors from the Far East, accustomed as they are to Kraepelinian diagnostic criteria, are usually amazed by the much wider conception of the term in North America. Similarly, the relatively high figure for incidence of the manic form of manic-depressive psychoses in some cultures has been attributed to the tendency of local psychiatrists to diagnose states of excitement as manic rather than as catatonic excitement or schizo-affective state as undoubtedly many psychiatrists would (17, 27).

Variability of locale of observations. Data on mental illness in primitives, as far as psychiatrists are concerned, have been predominantly obtained from hospitalized patients. Since in native culture, a majority of the patients suffering from mental illness do not seek medical help or are attended by native practitioners, observations based on hospitalized patients deal with a highly selected population. Comparison of observations made in field studies with hospitalized patients is clearly impossible.

Other difficulties encountered in establishing valid comparisons include inadequate training of anthropological observers in psychiatry and inadequate training of psychiatric observers in anthropology, as well as differences in the quality, training and orientation of the psychiatric observers, in the methods of sampling, in the intensity of the investigation, and in the methods of computation of data.

Last but not least, differences in cooperation of the populations studied have to be taken into account. Partly because they mistake the white doctor as the stereotype of the "official" partly because they fear hospitalization, natives on being interviewed are apt to adopt evasive tactics (36) or to fabricate. Africans are known to be great storytellers (11). Moreover when an interview with a preliterate or barely literate person has to be conducted through an interpreter, distortions of meaning will inevitably arise.

SUMMARY AND CONCLUSIONS

There are many ways of viewing the etiology of mental disease. It can be understood as being due to heredity, due to fixation at infantile levels of instinctual development and faulty early object relationships, due to biological dysfunctions and due to influences arising from interpersonal relationships within the society or culture in which an individual lives. None of these viewpoints is "wrong" but each represents a segmental view of a multilateral process.

In the foregoing an attempt has been made to survey our present knowledge regarding the relevance of social and cultural factors to the etiology and treatment of mental illness. In this survey which inevitably had to be incomplete many questions have been raised and few have been answered. It has been shown that the major categories of mental disorders occur ubiquitously, that there is some evidence that they are distributed unevenly, that nosological differences exist between different cultural areas and that differences both in frequency and in nature of clinical manifestations can be related to cultural differences. Methodological difficulties especially of comparative quantitative studies but also of qualitative studies have been pointed out.

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THERAPEUTIC RE-ORIENTATION IN SOME DEPRESSIVE STATES : CLINICAL EVALUATION OF A NEW MONO-AMINE OXIDASE INHIBITOR (W-1544-A) (PHENELZINE (NARDIL)¹)²

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Humphrey Osmond(1), in discussing historical considerations in "Chemical Concepts of Psychosis" stated, "When you are searching for a needle in a haystack, the knowledge that someone has pricked a finger ought to be encouraging." It would appear that in this era of ataraxics and energizers some investigators have experienced lancing wounds.

In 1939 I was a first year staff psychiatrist at Norristown State Hospital in Pennsylvania. At Dr. A. P. Noyes' weekly diagnostic conference, the following case was presented :

A female, aged 54, hospitalized for 2 years, exhibited marked retarded depression, anergia, insomnia, anorexia, and anhedonia. She had twice tried suicide. Her predominant remark was "I feel dead inside and wish I were dead." Her lips were cracked and her neck showed reddish discoloration. Her tongue was dry. Constipation was extreme. Her ward physician, then in analytic training, offered a diagnosis of Involuntional Melancholia and proceeded to give his psychopathological formulation from the then current Freudian viewpoint. "This patient suffered from penile envy as a child. Having a baby, to her, equalled having a penis. Menstruation meant the capacity to have a baby (or penis). Cessation of menstruation caused an awakening of infantile attitudes concerning castration. Thus involuntional depression unconsciously was related to a disappointment over the lack of a penis." In discussing the case I remarked that the clinical picture was suggestive of the depressive state accompanying pellagra, for which nicotinic acid might be of value. The laughter of my colleagues squelched me. It was then heretical to object to dynamic analytic formulation.

I was then aware of Bleckwenn's(2) report in 1930 on the intravenous use of

sodium amytal in altering affective states. Accordingly, I gave the patient a solution of 3% grains of sodium amytal intravenously. Her response was dramatic. Within 3 minutes she was conversant, describing her intense relief that something could help her. Within 2 hours she again relapsed into her former state. I am sure this reaction has occurred in the experience of many eclectic psychiatrists. Heartened, I prescribed nicotinic acid and she eventually improved. But how did improvement occur? This thought and the sequence of events leading up to it remained with me. The era of electroshock treatment did not obliterate it. Moreover, numerous referrals of depressive psychoses from psychoanalysts who conceded defeat with analytic therapy (and whose patients responded to ECT) served only to heighten my curiosity. Do we really know anything specific about most depressive states other than pure theory or empirical result?

In January 1957, when my attention was directed to iproniazid by Kline, *et al.*(3), the experience of 20 years before sparked my curiosity. Perhaps iproniazid, related to nicotinic acid, was a breakthrough to a more specific understanding of depressive states?

Accordingly, I treated 100 cases of severe depressive syndromes with iproniazid, reporting my results to the Eastern Psychiatric Research Association in October 1957 (4). Approximately 3 out of 4 cases responded as well as, if not better than, to ECT. This experience has been verified by others.

Zeller's(5) contribution that iproniazid inhibited mono-amine oxidase suggested a potential pharmacological understanding for the improvement clinically demonstrable.

Brodie, Spector, and Shore(6), demonstrated the potential importance of the brain "neuro-humors" serotonin and norepinephrine, and their relationship to the enzyme mono-amine oxidase. Iproniazid,

¹ U. S. trade name.

² Read at the 115th annual meeting of The American Psychiatric Association Philadelphia, Pa., Apr. 27-May 1, 1959.

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inhibiting mono-amine oxidase, increased available brain nor-epinephrine and serotonin for "normalizing of cerebral activity." Is it likely then that mono-amine oxidase inhibitors act as catalysts in psychological energy exchanges? In depressive syndromes, where anergia is such a dominant symptom, the recall of a basic law of physics, that "energy can neither be created nor destroyed, but may be transformed" seems rational within the conceptual framework of "psychic energizing." Psychiatrists must now give attention to this new parameter and also integrate these concepts with recent neurophysiological data concerning input, brain coding and de-coding, feedback systems and output mechanisms.

While these concepts bring us closer to a psychophysiological understanding of therapeutic effectiveness, there are still many blind spots in the theoretical construction, but for the present, new insights are accumulating in the etiology of "depression." Reflect for a moment on an excerpt from a recent address by Aldous Huxley, entitled "The Final Revolution." Therein he discussed "the social, ethical, and religious implications of the new biochemico-psychological techniques which are making it possible to act *directly* on the human organism rather than, as was the case with earlier revolutions, on the environment with a hope of changing behavior *indirectly*."

NOSOLOGY

Evaluation of mood disorders requires attention to the outstanding manifestation, depression. Glibly we talk of the treatment of depression, frequently using the symp-

tom and the syndrome interchangeably.

When we communicate within the framework of reference of "depression," exactly what do we mean? Much confusion exists. Garmany(7) studied 525 depressives divided into 3 categories:

A. In the manic-depressive endogenous type, depression comes from within, meaning the same as idiopathic, *i.e.*, one does not know why it happens but that it is a disease entity.

B. In the involutional depression, the age range is usually menopausal to old age. There is a pre-morbid compulsive perfectionistic personality. No previous attacks have occurred and usually hypochondriasis and agitation have been associated.

C. In the reactive type, there is a progressive reaction to events and thus it is not considered as a disease entity.

Garmany concludes that the differentiation between these types is an unreal one and that their distinction is merely a matter of quantity rather than quality of the disease.

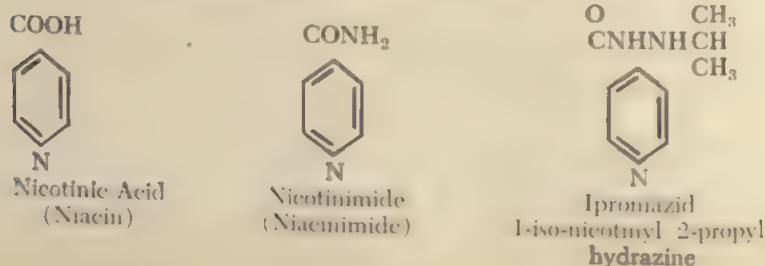
I take issue with these conclusions since this traditional concept maintaining the influence of primary situational factors and/or intra-psychic conflict denies the psychopharmacologic and physiologic understandings which are slowly accumulating. A more meaningful nosological classification of depressive states is long overdue.

W-1544-A (PHENELZINE) (NARDIL)

Due to the hepatotoxicity of iproniazid, intensive search has been underway for substitute effective analogues. In September 1958 the experimental compound W-1544-A

FIG. 1

STRUCTURAL RELATION OF NICOTINIC ACID AND IPRONIAZID



was made available to me for clinical screening. The structural formula is :



B-phenethylhydrazine

FIG. 2

CHEMICAL CONFIGURATION OF W-1544-A

Phenelzine (W-1544-A) in common with iproniazid, J.B. 516 (Catron), and numerous other drugs, is a potent mono-amine oxidase inhibitor. Experimentally in vivo animal testing demonstrates that W-1544-A effects approximately 5 times more mono-amine oxidase inhibition than iproniazid. Furthermore, 1/5 the dose of W-1544-A increases brain serotonin in experimental animals higher than iproniazid (8). It is of interest to note the structural similarity of W-1544-A and iproniazid to other sympathomimetic drugs, *i.e.*, ephe-drine, nor-epinephrine, and amphetamine.

W-1544-A in its action resembles sympathomimetic amines. It has a prolonged

effect on mono-amine oxidase and is cumulative in action on repeated administration.

TEST SAMPLE

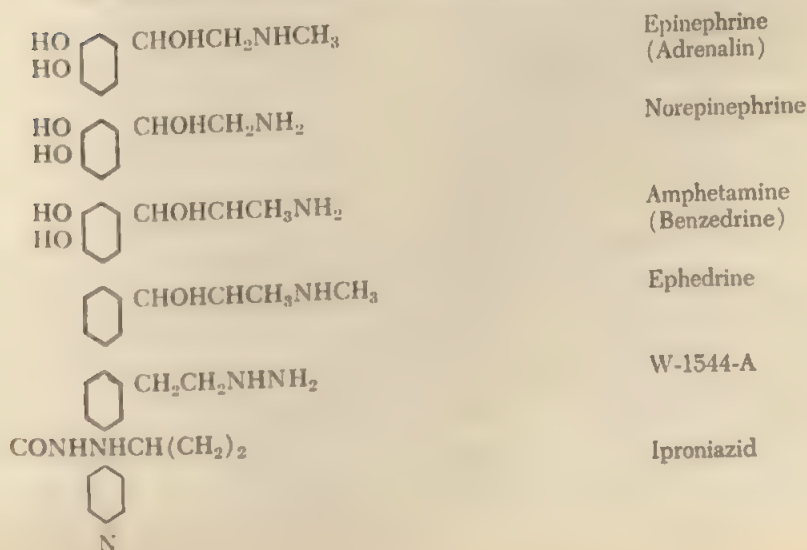
In this experiment, non-hospitalized patients were carefully selected from private practice primarily for the clinical picture of the depressive syndrome characterized by anergia, anorexia, anhedonia, weight loss, insomnia, and depression. Situational factors were either minimal or absent. Supportive psychotherapy was minimal and essentially of the repressive rather than expressive type.

DOSAGE

In this screening study oral dosage ranged from 60 mg. to 90 mg. daily in divided doses. If response was obtained within one week or less, the dosage was gradually adjusted downward. Pyridoxine 25 mg. daily was routinely used on the theory that this vitamin has prophylactic effect on the induced pyridoxine deficiency. Maintenance doses of 6 mg. daily of W-1544-A were eventually achieved in about 4 to 6 weeks and continued 2 to 3 months or longer.

FIG. 3

CHEMICAL STRUCTURAL RELATIONSHIP BETWEEN ENERGIZING DRUGS



SIDE EFFECTS

On this regimen there have been relatively few adverse effects noted. Most of the symptom complaints could hardly be distinguished from depressive concomitants. Those observed were:

SYMPTOM	<i>Probably due to depressive effect</i>	<i>Probably due to drug effect</i>
Headache	6	0
Constipation	2	3
Dizziness	3	2
Heartburn and bloating	3	2
Increased agitation	2	2
Drowsiness	1	3
Nausea	3	0
Insomnia	4	0
Weakness	0	2
Weight loss	1	1
Bad taste, dryness or burning of mouth	3	1
Blurred vision	1	1
Generalized paresthesias	1	0
Drowsiness and head fullness on sympathomimetic drug	1	0

FIG. 4

SIDE EFFECTS DUE TO W-1544-A

CONTRAINDICATIONS

Phenelzine has mild drug potentiations with sedatives and narcotics. In one instance incompatibility with Wyamine, producing severe headaches, was noted. Dental extraction with adrenalin-novocaine local anesthesia may have produced adverse blood pressure effects. As with all drugs of the mono-amine oxidase inhibiting group,

previous hepatorenal disease is a relative contraindication unless carefully followed with appropriate laboratory studies. No incompatibility between phenelzine and electrotherapy has been noted in 10 treated patients.

COMPARISON WITH IPRONIAZID

Extensive experience with iproniazid permits comparison as follows:

	IPRONIAZID	W-1544-A
Drug potency	+++	++
Hypotension	++	=
Appetite stimulant	+++	+
Weight gain	++	±
Edema	+	0
Libido	±	0
Insomnia	+	±
Jaundice	+	0
Tremors	±	0
Constipation	++	±
Paresthesias	±	±
Heartburn and bloating	±	0
Headache and/or dizziness	+	0

FIG. 6

COMPARISON EFFECTS OF IPRONIAZID AND W-1544-A

LABORATORY DATA

Pre-test urinalysis, C.B.C., alkaline phosphatase, thymol turbidity, and cephalin flocculation tests were compared with similar findings determined after the second month of ingestion. To date no significant abnormalities have been detected in 30 cases studied in this series.

FIG. 5

THERAPEUTIC RESULTS WITH W-1544-A

Total number of patients treated	50	
Number of patients completing more than 4 weeks treatment	36	
Number of patients approaching remission	25	
Number of patients unchanged	11	
Number of patients unimproved, not completed more than 4 weeks of treatment	14	
% Remissions of patients completing more than 4 weeks treatment		69%
% Patients unchanged who completed more than 4 weeks treatment		31%
% of remissions in total series		50%

SUMMARY

A re-orientation to theory and therapy of some depressive states is slowly coming into sharper focus. The sequence of events developing from the response of a depressed patient to nicotinic acid and its relation to iproniazid is presented. Psychic energizers, mono-amine oxidase inhibitors, serotonin, and nor-epinephrine may have etiologic relationship in depressive disorders. Neurophysiological findings must also be integrated with psychopharmacological researches. A more specific nosological re-classification to recognize that involuntional melancholia, manic-depressive states, and reactive depression may vary qualitatively rather than quantitatively is in order. Clinical experience with phenelzine (W-1544-A), a new mono-amine oxidase inhibitor, is presented as to drug characteristics, dosage, side effects, therapeutic effect, and comparability with iproniazid. In a preliminary screening at the private practice level, 69% of 36 patients who completed more than 4 weeks of treatment with W-1544-A showed remission from endogenous depressive states.

CONCLUSIONS

1. Phenelzine (W-1544-A) is a potent anti-depressant drug approaching the therapeutic effectiveness of iproniazid.

2. In a screening test with severely depressed ambulatory private patients, no jaundice, abnormal weight gain, or significant hypotension was noted with W-1544-A. This is in sharp contrast to the use of iproniazid administered under comparable conditions and similar dosage.

3. W-1544-A is a further advance in the psychopharmacologic, theoretical, and therapeutic re-orientation to depressive illness.

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DISCUSSION

DOUGLAS GOLDMAN, M.D. (Cincinnati, Ohio).—Dr. Furst's paper is concerned with two properly related topics: first, therapeutic re-orientation in some depressive states, and second, clinical evaluation of a new mono-amine oxidase inhibitor. From long experience in the treatment of depression in private patients and in state hospital patients, and from strong personal bias in favor of organic orientation in psychiatry as well as in favor of physical and pharmacologic treatment methods, I anticipated a great deal of satisfaction in the opportunity to study the material in this paper. The cause of organic understanding in psychiatry, however, will not be promoted by any but the most carefully documented data whether in relation to theoretic formulation or evaluation of new treatment methods. I am in complete agreement with Dr. Furst in his rejection of any analytic formulation as an explanation of the etiology of depression, but the attempt to relate the occurrence of pellagra in 1939 when it was all too common in state hospitals to the etiology of depression of long standing (which indeed might have been the cause of the pellagra), and relating the therapeutic effects of nicotinic acid with those of any amine-oxidase inhibitor of whatever chemical structure, is so strained that it represents a close approach to a psychiatric, chemical, and pharmacologic non-sequitur.

It is certainly evident to most of us that the concept of depression requires clarification, but there is as yet no warrant for criticizing Garmany's division of depressive patients into 3 categories: endogenous, involuntional and reactive, on the basis of

pharmacologic or physiologic understanding. Our knowledge, in spite of a great deal of effort on the part of many individuals and groups of careful workers, has not progressed to the point of clarifying and re-organizing clinical concepts. It may well be that physical and pharmacologic treatment methods are effective in the treatment of depression, but empiricism, however gratifying and practical, is no substitute for understanding based upon knowledge of etiology, anatomy and physiology. We are, in the understanding of the symptom, depression, at a level similar to that of the clinician dealing with fever prior to the discoveries of micro-biology and without the understanding of neuro-physiologic control of the temperature mechanism.

W-1544-A is a potent pharmacologic and therapeutic agent with properties similar to those of other mono-amine oxidase inhibiting hydrazides. We have used the material in a variety of state hospital patients with various depressive manifestations, occurring in a number of different clinical categories. We have treated 45 patients with W-1544-A over a period of 1 to 11 months as part of a larger project involving a number of anti-depressant drugs, both amine-oxidase inhibitors and substances without this property. In such a study of the effect of anti-depressant drugs, the concept of "psychic energy," is revealed as a useless mis-application of a good scientific word. As Dr. Brodie pointed out in a previous discussion along this line, the word "energy" refers to a measurable physical property that can be expressed in ergs.

Anti-depressant drugs have certain specific clinical properties that distinguish them from stimulants and from those anti-psychotic substances rather improperly called ataractics. All kinds of depression are not relieved by these drugs. Schizophrenic withdrawal, disappointment and grief do not respond. Only the specific kind of illness recognized by every psychiatrist as depressive, whether considered "endo-

genous," "dysphoric," or otherwise qualified, responds brilliantly to the use of the anti-depressant drugs. These drugs are not all mono-amine oxidase inhibitors. Other important properties of these drugs manifested clinically are the activation of schizophrenic symptoms in schizophrenic patients only, and the "over-shooting" of therapeutic effect with production of active manic manifestations in those depressive individuals who are susceptible to them. W-1544-A has these properties *par excellence* in common with iproniazid, Tofranil and other substances studied. These drugs therefore require reasonably close attention to the patient particularly in the earlier period of treatment, within the first 6 to 10 weeks. We have not seen jaundice with any of the anti-depressant drugs we have studied, and this includes 250 patients treated with iproniazid. W-1544-A remains innocent in this respect also. However, we have studied, over a long period, blood pressure fluctuations in 37 patients. Twenty-one of these, well over half, showed a drop of at least 20 mm. in systolic blood pressure and 8, more than 20%, showed a drop to 90 mm. or below. This is comparable to observations with iproniazid. It is, therefore, our considered opinion that blood pressure must be closely observed in the first 6 weeks of treatment, at least, and that patients who cannot be relied upon for co-operation should be omitted from study with this drug.

We have also seen two instances of hyperkinetic excitement produced by W-1544-A. This effect, also observed with other anti-depressant drugs is not to be confused with over-stimulation. It subsides promptly on the use of an effective phenothiazine, such as triflupromazine or perphenazine, given parenterally by preference under such circumstances.

We consider W-1544-A an extremely potent and useful anti-depressant agent requiring mature clinical skill in its use. It represents a significant addition to the list of drugs of psychotherapeutic value.

CONSIDERATIONS IN DETERMINING A MODEL FOR THE MENTAL HOSPITAL¹

MORRIS S. SCHWARTZ, Ph.D., AND CHARLOTTE GREEN SCHWARTZ, M.A.²

The controversy over the size of the mental hospital is but one of the many issues about the organization of inpatient facilities for mental patients. Other issues deal with the theoretical orientation that should guide such a facility or the treatment it should use. Some practitioners maintain that the basic orientation should be somatic; others hold that it should be psycho-social; still others attempt some combination of orientations. Drugs, individual psychotherapy, and milieu therapy are each advocated as the primary form of treatment.

It seems to us that a basic problem related to these specific issues concerns the model that is appropriate for an inpatient facility. That is, what plan or blueprint should serve as a guide for developing the form and social organization of a treatment institution for mental patients? Should it resemble a general hospital, a school, or a set of family units? Before such a model can be developed, certain considerations must be faced. In this paper, we would like to direct attention to what we feel are basic considerations in devising a model that would have potentialities for effectively contributing to the improvement of patients. We recognize that more than one model may be required. We are not concerned here with describing the kinds of models suitable for different types of patients, but with some considerations that have to be taken into account in arriving at such models.

THE FEASIBLE AND THE DESIRABLE INSTITUTION

In conceptualizing a model for an inpatient facility, it is important to consider both the institution that is feasible and the one that is desirable. Focusing upon the feasible directs attention to what can come about in the immediate future; considering

the desirable can help establish long-term goals that, in turn, will affect decisions made in the present. A basic difficulty in the discussions of inpatient facilities is the frequent failure to distinguish between the feasible and the desirable. Practitioners often fail to make clear whether they are referring to what they believe *should be* or what they think *can be* achieved in the immediate future. Thus, in the present controversy over the size of the facility, do some practitioners support the idea of the large state mental hospital because they think it is the only feasible pattern at present while their opponents attack it because they believe the conventional state hospital is undesirable? If the participants in such discussions stated from which of these standpoints they were speaking, the issues might be clarified and fruitless talking past each other might be avoided.

THE THEORETICAL ORIENTATION TOWARD MENTAL ILLNESS AND ITS TREATMENT

Another important set of considerations is the practitioner's conceptions of mental illness and its treatment. Often kept implicit, these conceptions partly determine his ideas about what patient needs are, how these needs can be met, and what can be done to facilitate patients' improvement.

A different type of facility may be required if the mental illness is seen as a function of faulty interpersonal relations to be treated via interpersonal means than if it is conceived of as an organic disturbance for which somatic therapies are indicated. In the former case, the primary orientation would be on organizing, directing, and utilizing interpersonal relations for patient benefit. In the latter, the primary function of the social organization would be to facilitate the administration of somatic therapies. If the conception of illness encompasses both the interpersonal and the somatic, the facility would need to be different from one based exclusively on either conception.

It seems to us that if practitioners are

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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to develop a rational plan, they must make explicit their conceptions of mental illness and its treatment, the bases for their ideas, and the implications of these conceptions for the form and organization of an inpatient facility. From such specification they can begin to draw the connections between theory and practice and develop the outlines of a facility accordingly.

THE PURPOSES AND INTERESTS PRACTITIONERS WOULD LIKE THE FACILITY TO PURSUE

The goals of the facility must be considered in planning it. Although the stated goals may be to treat patients and to help them return to society, a mental institution usually has other goals, such as: protecting society against deviants, protecting patients against themselves and each other, and caring for certain persons unable to care for themselves. These goals must be clarified and related to one another. This should help the practitioner discover the social structure most suitable for achieving the primary objectives.

Ordinarily, the hierarchy of purposes is not clearly specified, and practitioners try to pursue a number of purposes simultaneously without giving primacy to any one. This lack of clarification of the facility's purpose and of the conditions under which one or another purpose takes primacy makes it difficult to discover the kind of social structure that will most adequately carry out these purposes.

For example, if the major purpose is to re-educate and re-socialize patients, the practitioner must specify the kinds of social situations to which patients will return and the nature of the problems they will face. He then can begin systematically preparing patients for the roles they will assume outside the institution. This would mean that the form and structure of the facility must be oriented to the processes of unlearning and relearning social behavior and to guiding patients through a series of graded tasks and learning situations until they graduate to the outside. If the practitioner takes the primacy of this purpose seriously, he cannot just add the re-education idea onto the operation of the conventional mental hospital. The entire organization of the facility would have to revolve around this conception, and other elements

would be subservient to this purpose.

On the other hand, if the primary purpose is to protect society against the patient, another type of social organization would be more appropriate, directed toward maintaining control, surveillance, and reducing the risks of patient misbehavior and destructiveness.

Usually it is necessary to work out a balance between a number of different purposes. For a multi-purposed institution, it is important to be clear about the conditions under which one purpose takes precedence over another.

Furthermore, it is important for the practitioner to specify the effects he would like to have on patients as a result of their stay in the facility, in terms of cure, reorganization of personality, improvement, alleviation of symptoms, prevention of further deterioration and the like. Practitioners also hope their patients will attain a more adequate degree of functioning in social roles or develop the ability to get along outside a mental institution.

While some practitioners believe it is important to make treatment objectives explicit, they often fail to make explicit the social objectives that they hold for patients. Even less frequently do they consider the connection between their objectives for patients and the way the facility needs to be organized to attain these objectives.

We would maintain that the practitioner's treatment objectives imply a set of social values. These values become embodied in inpatient facilities. Some institutions, for example, largely reflect the values of having patients "get along with people," abide by institutional rules and regulations, and be cooperative members of hospital society. Many of the institution's forms are directed toward insuring patient conformity.

But if a practitioner values individuality and uniqueness in patients, he would have to develop a structure that would minimize restrictiveness on patient behavior and would encourage spontaneity. The two social structures would necessarily differ.

But whatever the purpose or purposes and whatever the specific treatment objectives and social values for patients, it is

necessary that each be made explicit in order to evolve a model that can meet these ends effectively.

SUMMARY

In this paper, we have discussed what we consider to be a basic problem in the field of inpatient care: the relative lack of exploration and analysis of the considerations basic to developing a model for an inpatient facility. We have suggested 3 considerations that we feel are important in

such analysis: the feasible and the desirable institution, the theoretical orientation toward mental illness and its treatment, and the purposes and interests practitioners would like the facility to pursue.

It is our conviction that if practitioners explore the implications of this kind of analysis, they may be able to formulate more adequate models for inpatient facilities and thus achieve their central objective of contributing more effectively to patient welfare.

A PSYCHIATRIC STUDY OF CHECK OFFENDERS¹

JOHN M. MACDONALD, M.D.²

Check crimes are among the leading causes for commitment to penal institutions and probably result in greater financial loss to the community than any other form of crime. It has been estimated that check forgery costs the United States \$535 million each year(1). The armed robber receives more publicity than the check offender yet the latter is far more successful in his depredations. The pen is indeed mightier than the sword.

Check offenses include signing the name of another person or of a fictitious person, altering the value of a check and writing a check with the knowledge that there are insufficient funds in the bank to cover it. Legal terms for check crimes include forgery, confidence game, no account checks and short checks. A gullible public, difficulty in detecting the offender, and the reluctance of some victims to prosecute contribute to the problems of prevention.

The 300 subjects of this study include mental hospital patients with a history of check offenses, penitentiary inmates and check offenders referred by the courts for psychiatric examination. Although the group is not a statistically representative cross section of the check offender population, it nevertheless includes a wide range of check offenders. Recidivist check offenders may be classified, according to their pattern of criminal behavior, as skilled and unskilled bogus check writers, check thieves, "pushers" and short check writers. Occasional check offenders and psychotic check writers are considered separately.

The skilled bogus check writer plans his check passing carefully, limits it to a brief period in a large town and then moves quickly to another state where he repeats his offenses when his funds are exhausted. The checks are printed with the title of a state or city government, a widely known or

a nonexistent company. In the latter case a bank account may be opened but only a small deposit is made. The check may be labelled payroll and the value, which is printed with a protectograph, is for an irregular amount such as \$88.72 to give the appearance of a payroll deduction for income tax. A large number of checks are passed late Friday afternoon and Saturday. When the bank discovers the fraud the following Monday, the check writer is already in another state.

When detected he seldom contests the charges and rarely enters a plea of insanity. A minority are extremely successful in evading prosecution by jumping bond or by simulating insanity. The skilled bogus check writer is usually of above average intelligence, between 25 and 40 years of age, and confident in his bearing. There may be a lodge emblem or Rotary Club badge in the lapel of his coat. He is well dressed, avoids flashy clothes and usually operates alone or with a female partner. In his youth, he may have committed other crimes, but now confines himself to check passing.

The skilled bogus check writer is often very successful in his criminal behavior. One offender passed bogus checks amounting to approximately \$55,000 in 28 states during an 18 month period. At the time of his arrest he had in his apartment, 172 completed checks, totaling over \$16,000 as well as 57 Selective Service cards and assorted identification cards(2). The following case history is given as an example of this type of offender.

Case 1. AB, a good looking, 30-year-old married man of superior intelligence (I.Q. 138) had a somewhat checkered career which included car theft at 15 years. He was earning a high income at the time of his induction into the Army during World War II. Unwilling to change his mode of living to suit his Army pay, he began writing bad checks which were at first covered by his parents. He soon deserted from the Army and for many years he was so successful as a checkwriter that he was able to hire a private tutor for his children.

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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No crimes were committed in his home town where he lived the life of a man of means. When necessary he would fly to a distant town, get a non-existent company with Dunn and B. Street as well as with a state or municipal agency, establish an office and obtain a telephone listing. Following publication of a new telephone directory, he would return, open a bank account and pass many checks over a weekend. Eventually, he became too ambitious and this led to his downfall.

He opened 2 offices in Denver. In one office a telephone machine gave a recorded announcement that the manager was out and a message should be left. He operated from the other office and referred awkward inquirers to the "manager." In a newspaper advertisement, he offered temporary employment at good pay for persons with college or business training. It was stated that veterans would be given preferential consideration. Prospective employees were required to complete an application form listing previous employment record. He was careful not to hire "obvious characters I wouldn't cash a check for if it was solid gold."

The 40 persons selected for employment were told that he was making a secret customer survey to determine the effort being made by appliance retailers to sell General Electric products as opposed to those of rival firms. They were each given checks for \$150 bearing the G. E. trademark with the words "Rocky Mountain Radio Company" and told to purchase not more than one small electrical appliance. The 4 employees who returned the best reports were promised permanent employment with General Electric as district supervisors. As security for return of the balance on the checks, they were required to leave adequate identification. One of his employees, a former policeman, became suspicious and when the bank president's Saturday afternoon golf was interrupted to check the amount in deposit, the fraud was discovered. AB was particularly irked by the employee's failure to mention his former employment as a police officer in his application form.

The unskilled bogus check writer seldom demonstrates the careful planning, ingenuity and resourcefulness of the skilled offender. He tends to repeat his offenses over a long period of time in the same locality and writes personal rather than business checks. The name of a former employer, acquaintance or fictitious person is used although not infrequently he signs his own

name, either as payer or payee. The checks are for small amounts and in the case of addicts are used to purchase alcohol or drugs. Many of these offenders are sociopaths, alcoholics or drug addicts.

Frequently upon arrest a plea of insanity is made. In support of this plea the suspect may claim that he had money when he wrote the checks and that the checks were written to buy golf balls for which he has no use as he does not play golf. Inquiry will show that the money was small in amount or not readily available and that the golf balls were purchased to persuade a storekeeper to cash his check. Further complaint is made that he must be crazy to write his own name on the checks and to continue such offenses despite repeated imprisonment. He adds, correctly, that he will get into trouble again if sent to prison and requests treatment in a mental hospital. Other suspects claim amnesia and give a history of blackouts following head injury. Usually, the amnesia is simulated or it originated in alcohol, the head injury was slight and the blackouts are not epileptic attacks.

Check thieves specialize in the theft of completed checks, blank checks, money orders, travelers checks and protectographs from business firms, drugstores and mailboxes. They may cash these checks themselves or more commonly employ "pushers" to cash the checks for a small commission. "Pushers" are other criminals, skid row residents or unsuspecting casual acquaintances. The checks are passed in taverns, stores or in supermarkets where certain items such as oatmeal and baby food are purchased to give an impression of respectability. A mimeographed "Check Passers Manual" found on a West Coast offender included hints on disguising handwriting, voice and appearance. The manual suggested that women should use padding and maternity clothing to facilitate both disguise and acceptance of credentials.

Short check writers habitually write checks on their personal accounts with the knowledge that there are insufficient funds in their accounts. This group includes "weekend borrowers" who cash checks on Saturdays with the intention of covering them early the following week. The loss

of time and money on the part of merchants trying to collect on these checks is considerable. The banks do not honor these checks and return them to the cashier. Nevertheless, many banks do not close such accounts until a number of insufficient fund checks have been passed. Criminal charges are often withdrawn by the complaining business firm on payment being made. In this manner the District Attorney's office is used as a collection agency, a practice which seldom meets with official approval.

Occasional check offenders include burglars who do not specialize in the theft of checks, but may steal them along with other items in a burglary. Other criminals may indulge in a single check writing spree but not continue this form of crime. Another occasional check offender is the young sociopath who takes a perverse delight in adding to the risk of detection by writing a check on the East Bank of the Mississippi, or by signing an improbable or insulting name such as U. R. Stung, U. R. Stuck, B. Short or the trade name of the gasoline sold by the service station where the check is being cashed. A new tenant in an apartment house may be tempted to break the law by the arrival in the mail of a check for the previous tenant.

Relatively few check offenders are legally insane. Of 30 legally insane check offenders, 12 suffered from organic brain disease, 10 from schizophrenia and 8 from the manic phase of manic-depressive psychosis. Checks passed by a confused person, suffering from the degenerative changes of old age, are usually honored by the family and criminal prosecution is waived upon the understanding that the patient will be committed to a mental hospital by the civil courts. In some cases of chronic organic brain disease, secondary to alcoholism, the check offenses may have occurred prior to, as well as after the onset of psychosis. Almost 50% of the schizophrenic and manic patients in this study were hospitalized under civil procedures and criminal charges were not filed. Curiously, the manic patient, despite his unusual behavior, is often not recognized as a sick person. Thus one manic patient purchased 6 radios and all the TV sets in a store and his check was accepted without question. An-

other patient, a laborer, wrote over 40 checks totaling \$100,000 in 3 days for purchases which included a new truck. He was not hospitalized until he gave his wife a check for \$30,000.

Police officers familiar with this crime claim that recidivist check offenders show a close resemblance to one another in their personality structure. Study of the clinical records of nonpsychotic recidivist check offenders did not however permit delineation of a typical personality profile. There was, however, a high incidence of sociopathic personality, passive-aggressive personality and chronic alcoholism. Eighty-nine, or 59%, of 150 consecutive offenders examined for the courts were chronic alcoholics.

A wide range of intelligence is found among check offenders. The present group included 6 mental defectives. One man with an I.Q. of 47, who was unable to read or write apart from his own signature, endorsed a bogus check on the instruction of a tavern friend. Another mental defective, explaining that he could not write, endorsed a stolen check with an X sign. The highest I.Q. was 140. In a group of 50 persons tested out of 56 consecutive admissions, 42% had an I.Q. higher than 110, as compared with 25% in the general population (Wechsler Adult Intelligence Scale). This is statistically significant as there is less than one chance in a 100 that this could have occurred by chance. Eight percent had an I.Q. above 130, compared with 2.2% in the general population.

Although many check offenders confine themselves to this one crime, there is usually a history of convictions for other crimes, particularly auto theft in their earlier years. In the present group other offenses ranged from impersonation of an officer, sex crimes and arson to armed robbery, assault, kidnapping and murder. The plane bomber, Graham, who caused the loss of 44 lives, was on probation for check offenses involving over \$4,500 at the time of his arrest. The repeated check offender seldom carries a gun and rarely commits assault.

He gives a variety of explanations for his criminal behavior: "Pressure of debts; family sickness; in-law trouble; divorce; blackmail; threats of physical violence; I

just wanted to have a good time for once ; I never write checks when I'm not drinking." Such statements do not provide an adequate explanation of the wayward behavior. Frequently the money obtained is squandered recklessly. One offender gave \$20 to a blind man, another was so popular with taxi drivers because of his generous tips that they would fight for his custom ; not a few gamble away their proceeds.

A deep seated feeling of insecurity which is assuaged by the purchase of friends or by the demonstration of affluence is one etiological factor. Schur suggests that the assertion of power over the victim may be as important to the swindler (though perhaps not on the conscious level) as is obtaining the sought after money or property (5). Every deception, every imposture is an assumption of power. The person deceived is reduced in stature, symbolically nullified, while the imposter is temporarily powerful, even greater than if he were the real thing(3).

The incurably optimistic overindulged oral character like Mr. Micawber is always expecting something to turn up. "I have signed checks because I was sure my financial position would take a turn for the better before they were due for presentation." The emotionally deprived offender will often commit his crime following rejection by parents or wife. One such offender passed bogus checks only during his wife's pregnancies, when she was unable to meet his excessive needs for dependency gratification. The crime provided symbolic gratification of his unfulfilled needs.

A hostile component in the crime is seen in the offender who writes a bogus check for the purpose of revenge. One patient embarrassed his wealthy father by cashing bogus checks only in stores owned by his father's business acquaintances. Offenders who are unable to express their hostility openly do so indirectly by swindling the victim. A self-destructive component in the crime is apparent in some cases. A patient who showed a need for punishment asked, "Why do I pull a life sentence on the installment plan?"

Parental contribution to the criminal behavior is seen in the offender whose fa-

ther was indignant not at the legal transgression, but at the failure to avoid detection. A widow provided false alibis and always paid the court fines imposed on her son. She would hug and kiss him whenever he was detected in another offense and the extent of her reprimand was the complaint "You should have told me." She was very dependent on her son and she complained that he only showed her affection when he was in trouble. She feared that successful treatment would result in loss of his affection and although she requested psychiatric treatment for him she effectively sabotaged it.

The crime provocative function of the victim deserves mention. Many small businessmen are less cautious in accepting checks when excessive profit is in sight. La Rochefoucauld's statement is pertinent, "One is never so close to being deceived as when one wishes to deceive." The laxity of some firms is remarkable. Checks without signature, employee's earning statements, the negative photostatic copy of a government check, and obvious forgeries have been cashed without hesitation. A 14-year-old youth endorsed an old age pension check and received immediate payment. A 52-year-old man used a high school identity card without arousing suspicion.

Check forgery is one of the easiest crimes to commit and there is no physical danger. The need for greater scrutiny of all checks to reduce the incidence of check crimes is obvious. Check passers avoid stores with cameras which photograph simultaneously the person offering the check, his identification papers and the check itself. Educational programs provided by the Better Business Bureau or similar organizations have been of value in alerting shopkeepers to simple preventive measures. Check alerts over the radio or by telephone publicize the theft of printed checks and discourage "pushers."

The deterrent value of punishment, whatever that may be, is weakened whenever there is a good chance of avoiding detection. The larger communities can well afford a police check squad specially trained to detect check offenders. It may cost more than \$1,000 to prosecute a check crime involving \$50 and courts in small communi-

ties are sometimes reluctant to prosecute because of the expense. Certainly the cost of extradition from a distant state, jury trial and possible psychiatric examination in the event of an insanity plea may prove a heavy financial burden, but in the long run it may be cheaper than failure to prosecute. Victims, especially banks and lawyers are sometimes unwilling to prosecute for fear of adverse publicity, resulting from exposure of their negligent business practices.

The failure of imprisonment to effect reformation of the check offender is reflected in the prison slang, "Once a paperhanger always a paperhanger." There is a need for more specialized penal institutions, similar to the Patuxent Institution (Maryland) and the Vacaville Medical Facility (California), where suitable offenders may be given psychiatric treatment while under indeterminate sentence.

Check offenders, prior to sentencing, often show considerable motivation for treatment. If probation is granted there is, almost invariably, a rapid loss of interest

in treatment combined with an expression of confidence for the future. It is imperative that regular attendance for outpatient treatment should be made a condition of probation. As Schmideberg emphasizes, therapists must accept the unflattering fact that offenders usually see them initially only as an alternative to prison. The therapist must try to convert this enforced relation into a genuine one which can then be used to socialize the patient. Success in therapy depends upon making this conversion(4). The period immediately following release from custody is crucial and the psychiatrist should keep in frequent touch with his patient in order to forestall further offenses.

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ENFORCED RESTRICTION OF COMMUNICATION, ITS IMPLICATIONS FOR THE EMOTIONAL AND INTELLECTUAL DEVELOPMENT OF THE DEAF CHILD¹

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This paper deals with the enforced restriction of communication of deaf children in regard to use of signs, as practiced in some oral schools for the deaf. Questions are raised as to what effect such restriction may be expected to have on the development of the deaf child.

In 1815, several gentlemen of Hartford, Connecticut, headed by Dr. Cogswell, who had a deaf daughter, became interested in the establishment of a school for the deaf in this country. The Rev. Thomas H. Gallaudet had shown some interest in the work and made experimental efforts in teaching Alice Cogswell. These gentlemen resolved to send Gallaudet abroad to study methods there by way of preparation for starting the school they had in mind.

Gallaudet, while in France, learned the sign language and an improved form of the alphabet as modified by the Spanish, and with a few slight changes this was adopted by him when he opened the first permanent school for the deaf in America at Hartford.

As time went on and more efforts were made to educate the deaf, attempts were made to teach the deaf to talk. It was found that the deaf could be taught, with considerable variation in the degree of proficiency, to read lips and to understand what was being said to them, and then to speak and answer with the spoken word rather than with signs. The enthusiasm for teaching oral speech increased in time and in some instances it seemed that this became the goal in itself, as far as the deaf child was concerned, rather than the means of helping him mature to his or her greatest capacities. The consequence was that some schools for the deaf teaching oral speech, prohibited parents from communicating with their deaf child by sign and prohibited

deaf children from communicating among themselves by signs. All communication had to be oral. It is this phenomenon that is being questioned in the present paper: the enforced restriction of communication of the deaf through sign language.

Three questions raised relate to: first, the possible effect of such restriction on the parent-child relationship; second, the effect of such restriction on the deaf child's attempts to communicate with his deaf peers; third, the effect on the intellectual development of the deaf child where the earliest form of symbolization is denied him.

With all children, the earliest forms of communication are through bodily contacts and gestures. Later on, in the hearing child, sound and voice begin gradually to replace gestures. There is no abrupt change, however, and all through life to a greater or lesser degree gestures continue to play an auxiliary role in communication among the hearing. However, in the case of the deaf child, the development is different. Up to a certain stage communication with the deaf child is exactly the same as communication with the hearing child. At one point, varying with the individual child, when it is learned that the child is deaf, where there are in certain areas facilities for his education, the parents are immediately told that all gesturing (signing) must now cease. All communication with the child must be made through speech. The parents are told, "talk, talk, talk all the time." What can such an abrupt inexplicable change mean to a child who is suddenly deprived, for no apparent reason, of all his previous methods of communicating and for a long time is given very little to replace them?

For a considerable time now, the word "rejection" has come to play a very important part in psychiatric literature in attempting to explain the vicissitudes the growing child must cope with in his rela-

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., April 27-May 1, 1959.

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tion to his parents. How great a rejection is it for the child who suddenly finds all his attempts to communicate with his parents suddenly denied him? At the same time the parents apparently stop making any attempt to communicate with the child in a manner familiar to him. Recently, through the work of Ruesch and Bateson(1) problems of communication and its importance in the developing individual have been brought to the foreground. What can it mean to a child who suddenly finds himself cut off from communication with a person or persons to whom he looks for his security and survival? The psychiatric literature has very little concerning either the normal or pathological development of the deaf child. None of the standard textbooks on psychiatry has any description of the emotional development of the congenitally deaf child. There have been sporadic attempts to pick out isolated problems of the deaf. We, therefore, cannot speak with any degree of accuracy of how the handicap of deafness affect the emotional or intellectual development of the child. Only recently have such large scale studies been undertaken as that at Psychiatric Institute in New York. However, I think we can project that by suddenly depriving the deaf child of its earliest and most natural means of communication we are laying the groundwork for future neurotic disturbances.

Ruesch & Kees(2) say :

In the first year of life expression necessarily must occur through non-verbal means. The child literally speaks with his whole body. Difficulties arise when parents are not flexible in communicating non-verbally and fail to respond at each age level with appropriate motions. An impoverishment of communication and character development can be observed in those children, who grow up in surroundings, where the verbal was emphasized too early and when messages expressed in non-verbal terms were left unanswered.

Ruesch and Kees here are referring to the development of the hearing child. How much greater impoverishment of communication and character development may we anticipate in the deaf child, where the non-verbal constitutes his only method of communicating.

EFFECTS OF ENFORCED RESTRICTION OF COMMUNICATION AMONG PEERS

One of the important phases in the development of the individual is the period during which he begins to shift from a total dependency on the family to a widening relationship with his peers. For the deaf child this again presents special problems. Up to the age when speech becomes significant as a means of communication, the deaf child experiences no problem that we can perceive, in relation with other children, since communication is on a non-verbal and action level. However, with the acquisition of speech by the hearing child, difficulties begin. The hearing child begins to wonder why his playmate does not respond when he talks and also why he can not understand the sounds made by the deaf child. The deaf child begins to sense a change in his relationship with his friend. He finds that his hearing friend understands less and less what he tries to convey and likewise begins to find that he understands less and less what the hearing child tries to convey to him. As time goes on, the deaf child begins to give up the attempt to communicate, except on a very concrete level. And unless the environment is very patient and understanding, which it rarely is, the deaf child withdraws more and more. Where the deaf child is getting oral speech, in the early years, this is only a slight help, because it is many years before the speech of the deaf child becomes intelligible in any way comparable to that of the hearing child. Even where there are interested adults around to help the deaf child, the difficulty in communication still prejudices a truly meaningful interpersonal relationship.

Case 1 : S. is a little girl of 7½ who, since the age of 3, has been going to a school for the deaf. S. apparently has a congenital hearing defect with a loss of approximately 80 decibels in both ears. At her school only oral speech is allowed. The children never are permitted to use gestures or the sign language, are punished for signing, and praised for using only oral speech.

At the age of 5, S. was sent during the summer to day camp. There she was the only child who had no intelligible speech, except for a few isolated words and phrases. Her school

had requested a report from the camp in regard to her experience there, and at the end of the summer the camp wrote a glowing report describing how bright she was, how well she adapted to all the camp routines, activities, etc. However, one statement that they did make suggests what I was trying to say earlier. It was this: "No child in camp selected S. as a companion."

It is an instructive experience to observe a deaf child attempting to be included as a part of a group of hearing children, and to note the transformation that occurs in the child at the approach of another deaf child. It is as if the child suddenly comes to life. The eyes and face light up. There is a change from a human being who is fairly quiet and somewhat perplexed to a vibrant communicating alive personality. Suddenly there is so much to say with gestures, signs, face and body, and one senses that the child now feels that he will be understood and responded to in an understandable manner. One senses in watching this scene that with the advent of another person with whom the child can communicate life takes on a different meaning.

The need for human beings to communicate is one of the most basic needs. In the deaf child the pace at which he acquires oral speech or the ability to talk is far too slow to meet this need. One has only to observe what happens when school is over and the children are away from the watchful eyes of the school authorities. Then as if a dam has burst, they begin to talk. They "talk" and they may even be accompanying verbalization of words here and there. But what one mainly observes is the communication that goes on through signing. Then they are really talking, and then one gets the sense that a meaningful emotional exchange is taking place between and among them.

If a deaf child is continually exposed to other deaf people who communicate by signing, there will be no need for formal instruction in the sign language. The child will learn of his own accord something that he senses is so vital and important to him. Parent R. reported this experience with her child. B. was a pupil at a school where signing was not allowed and the

school prided itself on this fact. There was never discussion between the child and parent about signing. However, one time when B. was about 5 years of age, the parent went into the bedroom where the child slept to get something. The child was lying in bed facing away from the doorway. As the parent walked into the room, she observed the child lying in bed practicing signs and the alphabet. As soon as the child saw the parent he stopped.

The question then that is raised is the following: What is the effect on the growing child in terms of his relationship with peers, where the feeling is fostered that one of the most vital facets of the relationship is one that is bad, and must be hidden at all times?

The growing child needs the relationship of peers to help establish an aspect of its identity. Healthy peer relationship helps the child separate itself in a healthy way from the very dependent family relationship it has been subjected to from birth. However, how is the child's image of the relationship distorted when the very basis on which it exists, namely, the ability to communicate with another, becomes laden with guilt. A healthy peer relationship becomes integrated into a healthy family relationship. And *vice versa*, a healthy family relationship helps the child develop healthy peer relationships. Can such a reciprocal healthy process occur where the child is made to feel that one of the most basic aspects of the relationship is unacceptable? It becomes a matter of friends versus family and to the child's burden of establishing his own identity is added the burden of the split that occurs between the child as part of the family and the child as part of a peer group. The child then does not experience growth as a continuum along a general line of development, but rather finds itself in the position of suddenly being in conflict concerning the very process of growth itself. Because growth to a very great extent is dependent on the ability of the growing organism to communicate meaningfully with its environment, growth and communication go hand in hand. And since in the deaf child such severe conflicts and restrictions are placed on communication, this must have the ef-

fect of producing severe conflict and restriction on the deaf child's ability to grow.

Finally, I wish briefly to question the effect of such restriction on the deaf child's intellectual development. We do know that intellectual development is to a considerable extent related to the development of language. To quote Dollard and Muller(3) :

Reasoning is essentially a process of substituting internal, cue-producing responses for overt acts. As such it is vastly more efficient than overt trial and error. Not only does it serve the function of testing symbolically the various alternatives, it also makes possible the substitution of anticipatory responses, which may be more effective than any of the overt response alternatives originally available.

It is language that supplies the symbols. But for the deaf child the process of learning these oral symbols is a long and slow one.

Dr. Edna S. Levine(4) says :

Even at best the task of verbalizing minds-without-words, whatever the means, is a slow exhaustive process. The pupil's needs for life enlightenment begin to outstrip the store of language he is so painstakingly learning. The problem is how to get such information across to him when he has not yet mastered enough language for understanding explanations.

It is here that I feel that the use of signs helps the deaf child make up this deficit to some extent. These are symbols for the child to use until such time as he acquires the oral symbols that may then replace or

reinforce the manual symbols. But at least until such time as he acquires adequate oral symbols, he is not denied the use of any that are meaningful to him and that enable him to test symbolically various alternatives, rather than continually function in a trial and error acting response.

SUMMARY

This paper does not criticize the great work that is being done to promote the meaningful growth and education of the deaf child and helping him to achieve as much oral facility as possible. It is presented in the hope that hand in hand with this, there will be a more tolerant attitude to the deaf child's need for language through signs, until such time as language through oral speech may replace it. It is felt that one may enhance the other, rather than being antithetical to each other. Some of the negative aspects of the present attitude have been presented with the hope that the questions raised here will arouse further interest in this matter and stimulate others to study this problem.

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MURDERING MOTHERS¹

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Medea, the outstanding example of multiple filicide in Greek mythology, murdered her children after she had been abandoned by Jason, her husband, for another woman. It is of interest, however, that she also had serious difficulties in her relationship to her own father and had also assisted Jason in the murder of her brother previously.

In 1937 Lauretta Bender(1) postulated that child murders by parents are suicidal acts as a result of identification with the child, not primarily an act of hatred against the child. The attempt may start as a suicidal drive, gradually converting to an attempt to kill both self and child, but ending in just killing the child. Likewise, it may be an effort to escape the turmoils of life, real or delusional, and the child victim becomes part of the escaping personality. Wertham(2) amplifies on cathartic behavior, a concept first introduced by Hans W. Mayer in 1912. It is usually accompanied by marked egocentric behavior and a disturbed balance between logic and affectivity. Helene Deutsch(3) states that women who have not received maternal love in their childhood develop less motherliness than others. Often their own rejection of the mother inhibits their maternal feelings. The well integrated mother expands her ego through her child, the maladjusted feels restricted and impoverished through him. Unbearable pressure of reality in the conflict between self preservation and motherhood may lead to complete rejection. McDermaid(4) stresses a conscious feeling of inability to bring up the child which may lead to filicide. Socio-economic factors, likewise mentioned by McDermaid, may readily enter motivation toward the deed. Melanie Klein(5) states that the rejected child may grow up to be cruel. Bromberg(6) mentions that the victim often represents the murderer in the

latter's unconscious. Pollak(7) finds that the type particularly exposed to female homicide are children and persons to whom women are related or in close contact. It seems to him that filicide and the abandonment of children are specifically female deeds. Podolsky(8) speaks of the unpredictability of filicide, that the background of the parent is usually of a complex nature and that the deed as such indicates a short circuit reaction.

While obviously there remains considerable controversy regarding the motivation toward filicide, the following 5 cases admitted to Elgin State Hospital during 1956 to 1958, may serve as further illustrations to behavior widely publicized when it occurs, but little understood.

Case 1.—(L.D.) White female. Born in 1928, in Central Illinois. Age at filicide, 27. Admitted 10-23-58. Discharged by writ of habeas corpus on 4-5-57. She is of French-Irish-Jewish descent, has no religious affiliations, separated from her husband. Began to support herself as a strip-teaser after 3 years of high school. On February 26, 1955, patient killed her daughter, aged 3, her only child, by giving her an overdose of seconal and nembutal mixed in tomato juice in a hotel room. Following this she took a sizable amount of the same capsules herself, in a serious suicidal attempt. The patient is of illegitimate birth, and while her mother was married 4 times, she had never married the patient's natural father. Also, the mother bore no children from her 4 marriages. The patient, however, grew up in dire emotional, physical and material neglect, at one time during her adolescence even being approached sexually by one of her 4 stepfathers. This chaotic background was further colored by frequent institutionalizations in homes for neglected children and by equally frequent and disturbing changes of school. Finally, at age 17, the mother describes her as "impudent, disobedient and defiant," whereas the patient in turn accuses her mother of exploiting her as soon as she became gainfully employed. She first worked as a waitress, then entered show business. At age 20 she entered a common-law marriage relationship with a highly inadequate male

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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who acted as her procurer for pleasure seeking men, being thus supported by her. This relationship nevertheless resulted in legal marriage after 3 years. Since the age of 21 she had been habituated to barbiturates and possibly marijuana. When she was 23, she gave birth to the daughter victim. Both pregnancy and delivery had been difficult. The couple separated soon after the birth of the child, and while her mother tried in vain to assist her by taking care of the baby, the patient preferred to live by herself and follow her career in show business. This resulted in the mother at times being thrown out of patient's home and the baby being sadly neglected. Early in 1955 the patient contracted pneumonia. During this illness and after recovery, she found herself in such destitute financial circumstances that welfare agencies tried to place the child away from her. In utter desperation the murder-suicide attempt took place in a racially mixed Chicago South Side hotel. Mother and child were discovered after 40 hours by a house detective, the mother in deep coma. Significantly, she had left this suicide note: "Bury us together in one box, please. We belong together, you know." Regarding her survival, she stated that "God did not want her to die and that she had to comply with his wish." Arrested and placed in jail for murdering her child, a jury found her insane at a sanity hearing. Then followed hospitalization at Kankakee State Hospital, which resulted in another sanity hearing in 1956, finding her "not recovered." She arrived at Elgin State Hospital as a transfer. While with us she maintained the delusion that during her illness her 3-year-old-child nursed her and took care of her "financial affairs." At various times the patient was found to be a behavior problem, but as a whole she presented a picture of an extremely immature and adolescent person.

Case 2.—(C.B.) White female. Born in 1922, in Northern Illinois. Age at filicide, 35. Admitted 4-7-57. She is of Scotch-Irish descent and protestant religion, married, attending to household duties, and graduated from high school at age 17. One day prior to admission she choked to death with her hands her 11 year old daughter while at home. Patient's father is described as having been too strict and demanding of his children, while the mother was excitable and emotionally unstable. Patient is third of 4 siblings, with whom there was strong rivalry. She stated that her parents failed to satisfy her need for affection during the formative years. Her oldest sister was committed to a mental hospital in

1939. This sister's daughter has been an epileptic since age 12. There was a paternal aunt who had a "nervous breakdown" in 1920. Patient married in 1941, when she was 19 years of age. There were 3 children from this union: a daughter, born in 1946 (the victim), and 2 sons born in 1948 and 1953. Four years after marriage she developed a "nervous stomach and undefined headaches," and felt deserted when her husband left her to serve with the Armed Forces during World War II. There were 3 major disturbing situations in the patient's life prior to commitment of the deed: 1. Her husband had openly rejected her, 2. A younger sister became subject to serious marital difficulties, and 3. The older son, then aged 9, was diagnosed as suffering from a severe heart defect. As a reaction to this, patient turned intensively to religion. On the night of the victim's 11th birthday, patient choked her to death, allegedly obeying a divine command. A few days after admission she tried to strangle herself with the wire of a mattress. Retrospectively, she described the child victim as a discipline problem. Patient was discharged on 10-16-57 as having recovered from a schizophrenic episode during which the tragedy took place, and is presently reported by the family as doing well. Immediately after her arrest she was taken to a sanitarium, and the following day was transferred to us.

Case 3—(V.D.) White female. Born in 1910, in Vermont, Illinois. Age at filicide, 47. Admitted 2-25-58. She is a widow, of Irish-Dutch descent and protestant religion. Graduated from high school at age 18. She worked at many trades, but has been employed as a factory worker prior to commitment. On 8-28-57 patient shot to death her feeble-minded son, 14 years of age, while visiting him at a mental institution. Patient stated that her father died of the flu when she was 8; she remembers him as friendly. Following father's death her mother was forced to resume her profession as a registered nurse. Her mother died when patient was 26. She is second of 3 siblings, who got along well but were left to shift for themselves when mother was away from home, with minimal supervision by the grandmother. After graduating from high school she started working as a photographer's helper. She met her husband, 11 years her senior, at a photographer's meeting, and the two eloped and were married in 1936. She describes the husband as quick tempered and "hard to get along with." They were divorced after 3 years, but significantly, after the divorce she continued to live in the back room

of his studio. Three years later they remarried. There were 3 boys born to this eccentric union: one during the first marriage, the second during the divorce period, and the third (the victim) who had been conceived during the divorce period but born after the husband's death, which happened shortly after the remarriage. The two older children had been placed with welfare agencies during the divorce period, but after the husband's death all 3 were placed until 1952, when the patient demanded them back and tried to support them with her meager wages as a factory worker. The 3 children lived in perpetual strife after their return to the mother and the oldest openly expressed his hostility towards the youngest, the feeble-minded. Finally the authorities placed the latter in a public mental institution. There, during a visit, she shot him while taking him into her arms, and was immediately arrested. Already in 1942 she was described as secretive and suspicious, but prior to committing the deed she had been overheard saying that she would rather see her children die than suffer. Brought to trial on 12-9-57, she was acquitted and started to keep house with her second son. Only when she told a welfare worker she might have to kill him also unless she received public assistance, was she committed. She blames the tragedy on financial embarrassment and says that she couldn't see the child stay in an institution. Presently her frame of reference and her concept of reality remain that of a schizophrenic, and psychological testing confirmed this.

Case 4.—(B.F.) White female. Born in 1930, in Bonaparte, Iowa. Age at filicide, 27. Admitted 4-25-58. She is a protestant, married housewife, who used to be active as a trade newspaper editor and has a 4 year college education, majoring in journalism. On February 6, 1957, she drowned her 3 children in a water filled bathtub at home. They were a boy, aged 5, and twin girls, aged 3. Patient then attempted suicide by first trying to drown herself in the same bathtub. Failing, she attempted to electrocute herself at the fuse box, then drank ammonia, causing burns in mouth and throat. As a last desperate attempt she turned on the gas stove, placing her head in it. In this position she was found by her husband, unconscious, but later revived. Her father, who was a veterinarian, played a very minor part in the family, being completely absorbed in his profession. Patient was closer to the mother, but even from her she received very little affection, as did the other siblings. There were 4 sisters, among whom the patient

ranked third. She remembers her mother frequently expressing a deprecatory attitude towards all males and regretting ever having married. Much criticism, but little praise colored the parents' attitude toward the children. She graduated from high school at age 16, and was valedictorian of her class. She then went to the University of Iowa and graduated with a degree in journalism, to become editor of a small business magazine. During her scholastic years she applied herself fully to her academic studies, neglecting her social life. She married at age 21, in 1951. Her husband is described as a very domineering person, who subjected his wife to perennial criticism and gave the patient a constant feeling of insecurity. The boy was born one year after marriage, the twin girls about two years later. After marriage the patient gave up journalism and the husband supported the family by managing a dress shop in a Chicago suburb. He is said to have been more concerned with his business and the physical aspect of the home than with his family as individuals. Already in 1956 the patient expressed feelings of hopelessness, despair and despondency. She felt "like dying," she became overprotective of her children and began to resent the husband severely. The son had recently developed a serious eye disease. On 1-2-57 when their house caught fire, she saved the boy, the husband saved the twins. After this she began to feel that the children were suffering as much as she was and a need developed in her to do away with "all of us," this statement apparently excluding the husband. This culminated on February 6 of the same year in the tragic event. After regaining consciousness she made statements to the effect that "she had to do it, that it was too much for her and that God could do more for the children." Also, that she felt she "had nothing to live for, and experienced a general feeling of confusion and a need to get rid of the children." After her arrest she was given a sanity hearing and found insane. Committed to another mental institution, she tried unsuccessfully to obtain a discharge on a writ of habeas corpus on 1-13-58, and was transferred to Elgin State Hospital. At the previous mental institution she was observed to be overtly depressed. From this overt depression she recovered, but while under our observation it became evident that she harbored great resentment towards mother and siblings during her developmental years.

Case 5.—(S.E.) White female. Born in 1921, in Montclair, N. J. Of Italian extraction and of Catholic faith. She remains married, and had

been working as a secretary during the period marking the tragic event. She graduated from high school at 17 years of age. Age at filicide, 37. Admitted 8-27-58. On 8-22-58, while at home, she fatally shot in the back her two children, a boy, aged 6, and a girl, aged 3½, then tried to commit suicide immediately after by taking an overdose of tranquilizers. Her father stated that he never had a close relationship to his children, whereas mother and patient are described as close. The patient has one sister 2 years younger than herself. While her childhood and developmental years are described by her as being reasonably happy, this did not hold true for her two marriages. Her first marriage took place at age 19, and ended in divorce on grounds of cruelty after 4 years. Her first husband is described by her as high strung and difficult to understand. There were no children. Following the divorce the patient served one year as a WAVE. Her second marriage took place at age 27, in 1948. The first child was born 3 years later, and the second, 6 years after marriage. Shortly after the birth of the second child the husband left her for another woman, returning soon afterward in remorse. The patient had been hospitalized for psychiatric reasons in 1955, after she had learned of her husband's affair and also following a skull fracture the boy had suffered in an accident. While hospitalized she received EST. In 1957 the family moved to the Chicago area. Here she worked as a secretary to a manager of a theater. On the day before the tragedy the patient frantically called her husband, who was in the East, to return home immediately, but he arrived too late. Her stated motivation following the deed was that she killed the children because she feared being returned to a mental institution. Other statements elicited from patient since were as follows: "My brain was awake 24 hours that day. Could it be that I am dreaming? It was horrible. I was sick. We had financial trouble and I had to go to work. My husband traveled a lot on business. I lost my mind. It seemed that everything went wrong. I thought my children would have peace of mind in death. Everything piled up on me. I thought I would end it all. I had no place to leave the children. I was confused." The day following her arrest she was taken to Elgin State Hospital.

SODIUM AMYTAL INTERVIEWS

Cases 3, 4 and 5 are presently in the institution, and on January 4, 1959, sodium amytal interviews were performed on them. Case 3 exhibited florid manifestations of

her psychosis under narcosis, strongly emphasizing that she felt fully justified in what she had done, that "feeble-minded children must be done away with, if necessary, even by physicians," but that she may not repeat her act. In Case 4, the interview resulted in profuse crying when the tragic event was brought up, a reaction that remained absent when she was awake. Her overall feelings of inadequacy and inability to raise children, combined with a wish to "save them," concomitant with her suicide, was the tenor of her statements. "I had failed at everything else, so that I at least wanted to succeed with this" she said. Case 5 reiterated her feelings of rejection by her husband. "When my husband left, I was shocked, I got on my knees and asked God that my husband should come back. The trouble started when he came back—I would not trust him."

DISCUSSION

Case 3 still remains overtly schizophrenic. She is the only one who did *not* plan suicide. It is our impression that she is unable to accept imperfection regarding herself as well as in the 14 year old victim. She cannot allow that a part of her—her child—is organically defective. The confinement of her son at a mental institution was publicly exhibited evidence that pointed to her defectiveness, which was finally resolved by her act. She does not and cannot see that she has done wrong to anyone and feels justified in having done what she did. Her having been acquitted supports her feelings of justification—society has thus, in her mind, approved her deed.

All 5 cases show similarities: the 5 mothers experienced a definite coolness either from one or both parents during their childhood years, when the concept of motherliness begins to develop in the female. Without exception, all mothers had difficulties with their spouses, ranging from rejection, unfaithfulness and separation to divorce. With one exception, (Case 3), the entire group clearly involves filicide-suicide.

Suicide-murder may be interpreted as an attempt to remove the "total-all," the actual and the *extended-self*, so that nothing of the "self" remains. All 5 mothers revealed a feeling of extreme inadequacy and of in-

ability to raise children. In all of the suicidal ones a deep feeling of rejection by at least one important figure was present, creating a feeling of insecurity and non-acceptance of self to such a degree that life became unbearable and the "total-all" had to be removed. In Cases 2, 4 and 5 the mothers were aware of a physical deficiency of their children. This might have contributed to their own feeling of worthlessness and to the suicidal intent. Cases 4 and 5 are willing to explain their acts as breaks of insanity, as they cannot otherwise reasonably explain them. Case 2 maintains that she had divine direction, thus also claiming extraordinary circumstances, while Case 3 declares full justification for her act in the interest of the child, who was retarded and in a state hospital. Case 1 was overwhelmed by external circumstances when committing the deed and was not equipped to face them. In all cases the mothers are in effect attempting to explain their act by some extraordinary circumstance or condition which would suggest that they at least see intellectually the enormity and wrongness of their deeds.

History and psychiatric and psychological material of all 5 cases point to the diagnosis of schizophrenia, probably acute state at time of act. The balance between logic and affectivity was clearly faulty in each case, at least during the deed, and it was particularly this disparity which then indicated schizophrenic thinking. Cases 2, 4 and 5 would appear to be in fair remission, but Case 3 (the one justifying her deed) still strongly manifests highly unrealistic ideation. The whereabouts of Case 1 remains unknown. There is still evidence of much anxiety, apprehension, and a great deal of underlying conflict that has not been resolved, at least in Cases 3, 4 and 5. Socio-economic pressure entered in only 2 cases (1 and 3).

Interestingly enough, the prominent features which *did* vary in the series was the mode of killing: 2 mothers used shooting, the other 3 strangulation, poisoning and drowning.

All mothers appear regretful of the act, declaring that they would never commit it again on another child.

While there is similarity in background

pattern, one cannot possibly place all or any motivation towards filicide above one common denominator. Every factor mentioned initially in the review of the literature could be traced, but there will always remain individual variations as to nature and combinations of these factors and there are in all probability other unknown factors involved in such abnormal behavior.

Mundy-Castle(9) reports that murderers who are declared insane, or whose crimes are unmotivated, show an unusually high incidence of abnormality in the EEG. Cases 3, 4 and 5 had EEGs which showed repeatedly isolated diphasic spike activity in the temporal areas suggestive of psychomotor equivalent states. (W. C. Wilson, M.D., electroencephalographer, Glen Ellyn, Ill.) Obviously further investigation is needed in this area.

SUMMARY

Five cases of filicide committed by mothers are reported. Filicide remains an abnormality, primarily restricted to the female. Faulty relationships to either parent or extremely poor marital adjustment, or both, were present in each case. Four cases were combined with serious suicidal attempts, and a feeling of general inadequacy and inability to raise children was admitted by all mothers. All 5 appeared regretful of the act and state that they would never repeat it. The disparity between logic and affectivity was so strong in each case during commitment of the act that a diagnosis of schizophrenic break was justified in all 5. Motivations of punishment, revenge and secondary gain, as usually seen in ordinary murders were, to all appearances, completely absent. The primarily conceived suicidal attempts of the mothers rule these out almost logically. Thus, the suicidal attempts in no way represent an escape from the legal consequence of having done away with human life. A general feeling of unacceptance led to the suicide, and the "total-all"—including anything that belonged to the mother—had to abandon earthly existence, hence the combined filicide-suicide. Two cases involved 2 and 3 victims, respectively, the remainder one each. The mode of killing differed: two cases of shooting, one each of choking, poisoning and drowning. Ages of mothers

anged from 27 years to 47 years, of victims from 3 to 14 years.

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CLINICAL NOTES

THE EFFECT OF RO-5-0831/1 (MARPLAN) IN DEPRESSIVE STATES

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AND A. SILVER, M.D.¹

Since the discovery of substances loosely called inhibitors or tranquilizers, the search for excitator drugs or anti-depressants was inevitable. The discovery of anti-depressant action of iproniazid led to the exploration of a series of its less toxic and more effective analogues. It was assumed that the amino-oxidase inhibitory action of iproniazid was responsible for its anti-depressant activity. Even though this idea has proven to be untenable, several substances developed in this manner seemed to be effective against depression. Of these RO-5-0831/1² was the most promising. This substance is 1-Benzyl-2-(5-methyl-3-isoxazolylicarbonyl)hydrazine. In laboratory experiments it is considerably more potent than iproniazid in its amino-oxidase inhibition, 5-hydroxytryptophane potentiation and reserpine blocking activity.

A preliminary trial of RO-5-0831/1 was undertaken in 65 patients: 32 neurotic, 22 psychotic depressions, and 11 other syndromes (9 schizoaffective psychoses and 2 anxiety neuroses). There were 40 females and 25 males, average age 50 (the oldest 81 the youngest 15). The drug was administered orally with an average daily dose of 75 mg. (minimum 60 mg. and maximum 800 mg.), for an average period of 3 weeks (longest 3 months, shortest 5 days), with a 6 months followup. To increase the reliability of the assessment of the drug effect, two methods of evaluation were used: 1. Multiple observers, i.e. 8 psychiatrists (4 psychoanalytically oriented and 4 eclectic), and one research nurse assessed the therapeutic response; 2. Double blind studies without the use of placebo. This consisted of the establishment of a ward where all staff members are ignorant of the nature of

the different drugs used. In the present study 51 patients were assessed with the first and 14 with the second method. The criterion of improvement was the degree of symptomatic relief, based upon the following: behavioral (retardation, sleep and appetite) and experiential (guilt feelings, sadness, hopelessness). Relief under these 6 items was rated as marked, moderate and nil, and the final assessment was based upon the combination of the ratings. Laboratory tests consisted of weekly white and red blood count, transaminase, alkaline phosphatase, urine analysis; and twice daily blood pressure and TPR were performed with the first 40 patients.

The results of the two methods of assessment paralleled each other.

Among the 32 neurotic depressions, 5 showed marked and 12 moderate improvement; among 22 psychotic depressions, 7 marked and 10 moderate improvement. Thus the percentage of significantly improved patients was 60.3%, (22.2% marked and 38.1% moderate). Among the 11 basically non-depressed patients only 2 showed moderate improvement and that in the depressive component of their schizoaffective states.

It should be noted that the psychotic, so-called endogenous, depressions responded more fully to the drug and all of the improved patients in this category and some of those in the neurotic depressed category would have received electric shock, if they had not received Marplan. There was a therapeutic lag from 3 to 10 days in 70% of the patients, and it appeared that the optimum followup duration of Marplan therapy should be about one month after the relief of symptoms.

Side effects consisted of frontal headache, 17 patients, dizziness and fatigue, 12, tremor, 9, hypotensive attacks associated with fainting spells and falling, 3, oedema of ankle, 2, metrorrhagia and epistaxis, 1.

¹From McGill University and Allan Memorial Institute, Montreal and Verdun Protestant Hospital, Montreal, Can.

²RO-5-0831/1 supplied by Hoffman Laroche Limited.

The latter could not actually be attributed to the drug. Laboratory test findings remained within normal limits in all 40 patients tested.

CONCLUSIONS

1. RO-5-0831/1 is a sufficiently potent

anti-depressant to require further study. 2. It should be tried in instances where other anti-depressants have failed; 3. It brings into the therapeutic arsenal of depression the possibility of choice according to the patient responsivity.

CLINICAL EVALUATION OF CYCLOHEXALAMINE

PAUL E. FELDMAN, M.D.¹

A series of 55, chronically psychotic, hospitalized patients were treated with cyclohexalamine (Parke Davis Compound C-401) for an average of 78 days. The test group consisted of 49 schizophrenic patients, 3 manic-manics and 3 organic brain syndrome patients.

Maximum daily dosages varied from 20-80 mg. with the majority of the patients receiving 20 mg./day. Careful and frequent laboratory checks on renal, hepatic and hemopoetic functions were maintained throughout the treatment period.

At the termination of the study, 4 patients were found to have developed parkinsonism and one had developed urinary retention which subsided when treatment was stopped. The cases of parkinsonism were very adequately controlled by anti-parkinsonism drugs. No other side effects or untoward developments were noted. Significantly, this compound did not appear to cause drowsiness.

The laboratory reports were characterized by sporadic and unpredictable abnormal readings, completely unrelated to any clinical findings. This phenomenon has been noted in the past with other non-toxic compounds.

One-third of the patients responded with significant clinical improvement (moderate or marked overall improvement). The primary responses which accounted for this improvement were those usually seen with phenothiazine therapy, i.e., amelioration of delusions, hallucinations, negativism, hyperactivity, hostility and combativeness. In view of the chronicity of the patients' illnesses and their poor prognoses, this is considered to be a modest accomplishment.

The results in general warrant the recommendation that cyclohexalamine be subjected to further testing and evaluation, preferably upon a group of prognostically favorable patients.

(Laboratory data and responses of specific areas of behavior to cyclohexalamine are available upon request from the author.)

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ON THE RELATIONSHIP OF ADRENALINE AND ITS OXIDATION PRODUCTS TO SCHIZOPHRENIA

AARON FELDSTEIN¹

In 1952, Osmond and Smythies(1) put forth the interesting hypothesis that an abnormal metabolite of adrenaline was causally related to schizophrenia. Harley-Mason (2) suggested a methylated derivative of adrenaline, and Hoffer, Osmond, and

Smythies(3) suggested adrenochrome and adrenolutin. Hoagland, Rinkel and Hyde (4) thought that "adrenoxine" might be the toxic factor.

Hoffer has offered evidence in support of the hypothesis that adrenochrome is causally related to schizophrenia, evidence relating to the presence of adrenochrome

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in blood and the ability of adrenochrome to cause mental disturbances in man. It was reported(5) that when erythrocytes from schizophrenic patients were extracted with acetone a substance was obtained with an activation peak at $475 m\mu$ and a fluorescence peak at $480 m\mu$ which was stated to be characteristic of adrenochrome. However, adrenochrome in acetone does not fluoresce(6). The maxima observed were probably due to scatter light. The conclusion that adrenochrome is present in the erythrocytes of schizophrenic patients is therefore not justified by the evidence.

Hoffer, Payza and coworkers also have cited evidence for the presence of adrenochrome in the plasma of normal subjects(6, 7, 8, 9) and of schizophrenic patients(9). The evidence for the existence of adrenochrome in plasma is based upon an analyti-

cal method developed by Payza(6).²

A modification of the original method for the fluorimetric analysis has recently been published(6). Blood (heparinized) is drawn and centrifuged. To 1 cc. of plasma there are added 2 cc. of a zinc acetate ascorbic acid solution. After 30 seconds, 4 cc. of an acetone-ascorbic acid solution are added. Five minutes later, the reaction mixture is filtered and the filtrate read in a spectrophotofluorimeter at λ 400 $m\mu$, λ 500 $m\mu$. The method includes a blank and a recovery experiment.

Our investigations have led us to believe that the fluorimetric procedure does not

² We are grateful to Dr. Payza and Dr. Hoffer for extending an invitation to visit their laboratory and learn the methodology first hand; we are grateful also for data supplied in advance of publication and for a generous sample of pure adrenochrome.

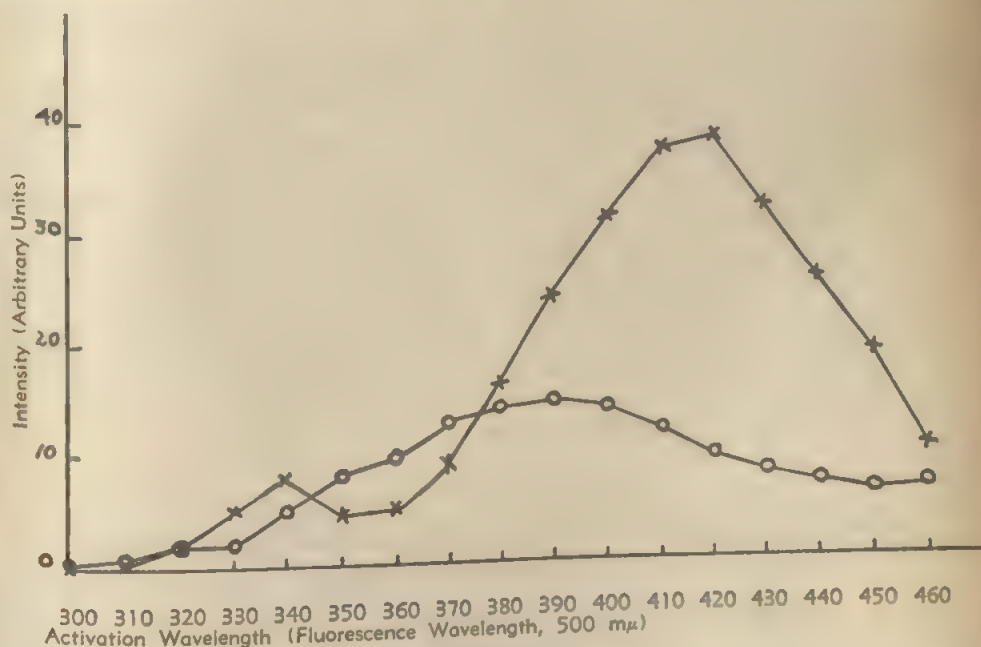


FIGURE 1

Curve 1 (X X): The activation spectrum of the reaction product of pure adrenochrome with zinc acetate and ascorbic acid added to a sample of plasma obtained from a normal subject. The spectrum was obtained ten minutes after the addition of the reagents. Curve 2 (O O): The activation spectrum of the reaction product of zinc acetate and ascorbic acid added to a sample of the same plasma. The spectrum was obtained ten minutes after addition of the reagents. In order to reproduce the activation spectra accurately it is necessary to time the reaction period from the moment zinc acetate comes into contact with ascorbic acid. If the plasma reaction mixture is allowed to stand an excessive amount of time, the 340 and 420 $m\mu$ peaks as shown in curve 1 will disappear and be replaced by the 390 $m\mu$ peak due to the reaction of zinc acetate with ascorbic acid. This might easily be interpreted incorrectly.

measure adrenochrome endogenously found in plasma, but that the procedure measures instead an artifact due to the reaction of zinc acetate and ascorbic acid. Our evidence is based upon a study of activation maxima which were not investigated in the published procedure(6).

In the absence of plasma, zinc acetate and ascorbic acid in acetone reacted to give a fluorescent substance with an activation peak at 390 $m\mu$ and a fluorescence peak at 500 $m\mu$; in the presence of plasma, the peaks were also found at λ 390 $m\mu$, F 500 $m\mu$. In the absence of plasma, added adrenochrome reacted with zinc acetate to give a fluorescent substance with two peaks, a major one at λ 420 $m\mu$, F 505 $m\mu$ and a minor one at λ 340 $m\mu$, F 505 $m\mu$; similarly, in the presence of plasma, added adrenochrome reacted to give a fluorescent substance with a peak at λ 420 $m\mu$, F 505 $m\mu$ and a minor one at λ 340 $m\mu$, F 505 $m\mu$. Fig. 1 shows the activation spectra in plasma after the addition of zinc acetate and ascorbic acid, in the absence of adrenochrome (Fig. 1, curve 2) and in the presence of adrenochrome (Fig. 1, curve 1). The details of this work will be published elsewhere(10).

We have never been able to find the 350 $m\mu$ or the 420 $m\mu$ activation maxima, characteristic of the adrenochrome-zinc acetate reaction product, in any of the plasma samples we obtained from normal subjects or schizophrenic patients. On the other hand, we have always observed the 390 $m\mu$ activation maximum, characteristic of the

zinc acetate-ascorbic acid reaction product, in the same plasma samples. Our conclusion is, therefore, that the presence of adrenochrome in plasma of normal subjects and schizophrenic patients has not been proved. It is important to note that Szara, Axelrod and Perlin(11) have reported that they could not detect endogenous adrenochrome in plasma.

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A NOTE ON THE CLINICAL EFFECTS OF PERPHENAZINE AT VERY HIGH DOSAGES

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LLOYD K. SINES, Ph.D.²

The clinical effects of perphenazine (Trilafon) at very high dosages were studied in a small sample³ of chronic, semi-regressed female psychiatric patients. An initial dosage of 8 mgm. t.i.d. was commenced on all

cases, and was increased rapidly in order to reach a maximum dosage within the first 2 or 3 weeks of the study. Maximum dosage was determined for each patient indi-

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³ Ten patients were selected. Age range : 36-63 years (average 54.2) ; length of hospitalization : 3-37 years (average 19.1 years). Six were schizophrenics, 2 were mental defectives, one a chronic brain syndrome with psychosis, and one a paranoid state.

vidually on the basis of the appearance of untoward physical reactions, or specific signs of toxicity. Medication was then decreased to a maintenance dosage, i.e., the point at which the maximum therapeutic effect and minimum untoward side effects were obtained. Maximum dosages ranged from 384 to 768 mgm. per day, with an average of 565 mgm. per day. The number of days from the beginning of the drug period to the attainment of maximum dosage ranged from 18 to 29. Maximum dosages were maintained for 1 to 13 days. Maintenance dosages ranged from 12 to 144 mgm. per day (average of 76 mgm. per day), and were continued for 6 to 47 days (average 30 days).

A brief physical examination, gross psychiatric screening, and blood pressure determinations were performed by the ward physician on an average of 3 times a week. Periodic white blood count and differential count were also obtained.

The patients' responses to high dosages of Trilafon were quite variable. In terms of therapeutic response, 4 patients were judged by the physician to have improved by the end of the drug regime, while 2 were judged to have become worse. One of the 4 improved showed a *marked* therapeutic response at a dosage of 576 mgm. per day, but then rapidly deteriorated into a catatonic-like state with accompanying severe extrapyramidal symptomatology. The generalized "shock-syndrome" noted by Weiss, *et al.*, was also observed in one instance.

Several significant physiological effects of the drug were noted, including: 1. A consistent and marked hypotensive effect, (observed with all patients) which persisted even after a 6-week period following withdrawal of the drug. This finding is at

variance with those of other investigators using Trilafon at conventional dosages. 2. Extra-pyramidal signs including tremor, rigidity, and/or drooling in 1/3 of the cases, and 3. A marked soporific effect at the highest dosages among 8 of the patients. Miscellaneous side effects including ankle edema, facial pallor, slurred speech, and constipation were observed in two or more instances. In addition, each of the following was observed in at least one of the 10 patients studied: gait disturbance, tachycardia, reduced appetite, gastric distress, urinary urgency with incontinence, and (possibly) an exacerbation of a previously existing seizure syndrome. Finally, a consistent diminution in activity level was observed among 9 of the 10 patients studied, as was a general decrease in verbal output. Blood dyscrasias, visual or other sensory impairments, hyperthermia, extreme variations in weight, and other severe debilitating effects were not observed.

It would appear that the clinical effects of perphenazine at extremely high dosage levels are essentially the same as those observed within the usual lower dosage range. Side effects were observed in approximately the same proportion of cases as has been reported for conventional dosages and, with the exception of a consistent hypotensive effect, no new or unusually complicating reactions were observed in the unusually high ranges employed in the present study. Even the "shock-syndrome" observed in the present series has been reported with the conventional dosage range. It would appear, therefore, that perphenazine has rather broad limits of therapeutic safety, though it seems likely (from this and other studies) that its therapeutic effectiveness may be obtained at relatively low dosage levels.

CLINICAL EVALUATION OF A NEW PHENOTHIAZINE TRANQUILIZER, FLUPHENAZINE (PROLIXIN)

IRVING J. TAYLOR, M.D.,¹

Over the past year, fluphenazine, identified as Prolixin², a trifluoromethyl derivative of hydroxyethyl piperazine propyl

phenothiazine, has been administered to 188 patients with mental illnesses who reported to this hospital for treatment. In these trials, fluphenazine proved to be the most potent of all the phenothiazines used,

¹ Taylor Manor Hospital, Ellicott City, Md.

² Supplied by E. R. Squibb & Sons.

as others have shown(1). Fluphenazine possesses marked tranquilizing activity with strong anti-hallucinatory and anti-delusional properties and also relieves anxiety and tension in patients without psychotic symptoms, as the following brief report will show.

METHOD OF STUDY

The Patients. The 188 patients in this study have been treated with fluphenazine since June 30, 1958. Of the total, 173 were inpatients and 15 outpatients; 170 were over 16 years of age and 3 were 14 years old. All had psychiatric illnesses, predominantly psychotic and acute. Therapy was continued in the majority of patients for 2 to 3 months, though a few were given the drug for less than 3 weeks. Medication was withdrawn in these last cases for a variety of reasons unrelated to its administration and usually of an administrative nature. Seven of the 188 patients have received fluphenazine for 5½ months and are still taking the drug. Four others have been on the drug for 4 months and at the time of report, 56 patients are receiving fluphenazine. Those patients who were not expected to benefit from a phenothiazine tranquilizer were excluded from the study.

The Medication. The dosage of fluphenazine varied from 1 mg. to 10 mg. daily, though 3 patients received more (15 or 20 mg. daily) for several days. The average patient was given 5 mg. immediately on admission, 5 mg. the next morning and 2.5 mg. each morning thereafter.

Throughout the study, fluphenazine was administered orally except in 19 cases where the drug was given intramuscularly for the first few days or weeks of therapy and thereafter administered by mouth. Injections were given in doses of 1 cc. (2.5 mg.) two or three times a day.

Other therapeutic aids such as psychotherapy, ECT, and change of milieu were employed in most cases. Barbiturates were frequently given at night to patients who required aid in sleeping.

Improvement in psychotic patients was evident by better behavior, diminished subjective symptoms, a more appropriate affect and less intense or no hallucinations or delusions. Improvement in patients without

psychotic symptoms was manifested by relief of anxiety so that they could function normally.

RESULTS

The results of treatment were as follows:

<i>Clinical Response</i>	<i>No. of Patients</i>
Excellent, or much improved	77
Good, or improved	64
Poor, or not improved	23
Discharged before final evaluation	24
Total	188

Within an hour after the first dose of fluphenazine the patients generally felt better and more relaxed. In most cases, a single dose in the morning sufficed to prevent a breakthrough of symptoms for the next 24 hours.

Extrapyramidal effects such as spasms of the shoulder girdle or neck were seen in some patients on 5 mg. daily and especially in those on 10 mg. daily, but these effects could be controlled by reducing the dosage. There were no other untoward reactions to the drug.

SUMMARY

Of the patients treated with fluphenazine, 141 of the 166 who were evaluated (85%) improved, 23 responded poorly, and 24 were for appropriate reasons not evaluated. The average dose was 5 mg. on admission, 5 mg. the next morning and 2.5 mg. thereafter as a single morning dose. Extrapyramidal effects were seen in patients receiving higher doses (5 to 10 mg. daily) but these were controllable by reducing the dosage.

Fluphenazine is an effective tranquilizer and is the most potent of the phenothiazines previously employed here, being about 25 times as potent as chlorpromazine. The rapid and sustained action of the drug and its administration as a single daily dose are distinctly advantageous.

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THE DEVELOPMENT OF INTERCURRENT DISEASE AND INJURY IN THE TRANQUILIZED PSYCHIATRIC PATIENT

GORDON W. OLSON, PH.D., and DONALD B. PETERSON, M.D.

The known direct physical side effects of tranquilizing drugs are amply described but there has been little study of the indirect development of intercurrent disease or injury in the tranquilized patient. Because a previous study seemed to indicate a disproportionate amount of physical illness and injury in tranquilized groups this study was undertaken to investigate whether tranquilization was associated with admission to the infirmary.

The sample contained 143 infirmary admissions admitted over a 2 year period. From the medical records it was determined whether the patient had or had not been tranquilized *at the time of appearance* of the physical symptoms which eventually led to infirmarization. The percent tranquilized was compared with the comparable figure in the remainder of the hospital population.

RESULTS AND DISCUSSION

Forty percent of infirmary admissions were tranquilized at the time of appearance of their symptom as compared with 36% of the noninfirmary population. In the group aged 55 and over there was 41% tranquilization in the infirmary group as opposed to 28% in the noninfirmary group ($p < .01$), while of those aged 54 and under, the percentages of tranquilization were 38 and 51, respectively ($p > .05$). These results reveal an interaction of tranquilizing drugs and age and permit the inference that tranquilization of the psychiatric patient over 54 carries a greater than chance risk of development of disease or injury. When the data are graphed by decade of age it is apparent that this risk becomes manifest at about the age when many physiologists and physicians feel that physical decline becomes more manifest.

age 45 to 50.

We were unable to establish a relationship of infirmary admission to either drug derivative or dosage; neither were we able to demonstrate an association within the infirmary admissions between the fact of tranquilization and the physical diagnosis, but there was a trend in the data to suggest that a psychiatric diagnosis of organic psychosis was less compatible with tranquilization in the sense of development of physical symptoms.

Thirty-six deaths occurred in the elderly age group. Sixteen (36%) occurred in the tranquilized group and 20 (42%) occurred among the nontranquilized. The difference in death rates was not significant. Thus, tranquilization appears to be associated with the development of nontatal disease and injury.

At the present time we are inclined to entertain the hypothesis of a general non-specific factor associated with tranquilization which in the elderly group either favors, enhances, or produces physical illness or injury. Examples of such nonspecific factors would be decreased motility, decreased respiratory exchange, or decreased alertness.

We grossly tested an alternative hypothesis that the early manifestations of physical illness in the psychiatric patient may take the form of irritability, or other behaviors which might then lead to tranquilization, by investigating the incidence of infirmary admission concurrent with electroshock treatment in 17 individuals, aged 55 and over. One (6%) developed symptoms during ECT which resulted in admission to the infirmary. This indicated to us in a molar way that emotional disturbance as a precursor to physical illness occurs at best in a very small percent of the age group concerned. Allowing for this possibility and recomputing the statistics for tranquilization in the older age group produced a difference that was still significant ($p < .02$).

¹Read in full at the 115th annual meeting of the American Psychiatric Association, Philadelphia, Pa., April 27-May 1, 1959.

²Respectively, Chief Psychology Section, and Superintendent, Anoka State Hospital, Anoka, Minn.

SUMMARY

This study indicated a direct, statistically significant association between tranquilization of hospitalized psychiatric patients aged 55 and older and the development of physical illness or injury. This was not demonstrated for patients of 54 and younger. Dosage or drug derivative could not be related to the development of illness nor could physical diagnosis be related to

tranquilization. The data did suggest that tranquilization may be less compatible with the chronic brain syndrome than with other psychiatric conditions. We conclude that tranquilization of the psychiatric patient over 55 is associated with the subsequent development of nonfatal disease or injury of sufficient severity to warrant infirmary admission.

BLOOD GROUPS IN SCHIZOPHRENIA, ALCOHOLISM, AND MENTAL DEFICIENCY

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Are blood groups related to mental disease? In 1939, Thomas and Hewitt(6) found no consistent correlation. Wiener(7) in 1948 cited numerous inconclusive studies from the earlier literature. Recently Lafferty and Knox(3, 4) found that white male schizophrenic patients were more apt to be Rh₀(D) positive, while Negro male schizophrenic patients had a greater frequency of Rh₀(D) negative than anticipated.

In view of these findings, a study of the patients at Colorado State Hospital was undertaken; 5,637 patients were classified according to diagnosis, age, sex and both ABO groups and Rh₀(D) type.

Individual blood donors listed with the Service League Community Blood Bank in Pueblo comprised the control population of 4,774. The results from comparison of the study groups and the control population were tested for statistical significance.

No correlation was established between schizophrenia (1,720 patients) and blood groups O, A and B and blood type Rh₀(D). The slight association between schizophrenia and blood group AB should be interpreted in light of the inadequate sample size.

There seemed to be an association between alcoholism (939 patients) and blood group A. The p value was .004.

There was no correlation between mental deficiency (482 patients) and either blood groups ABO or blood type Rh₀(D).

There appeared to be a correlation between the entire hospital population and blood group A. The fact that 2,496 patients were not included in the three groups studied could mean that one of the mental diseases excluded is associated with a greater frequency of blood group A. The diagnoses ranged from psychoneurosis to chronic brain syndrome.

The pitfalls encountered in a study of this kind are outlined by Manuila(5). He stresses that the normal variation in the ethnic and racial composition of samples may account for differences of 20% in the distribution of the blood groups. Then he mentions the sampling error which increases as the size decreases. The third problem concerns the technical error which in the past has varied from less than 1% to 9%. Wiener and Wexler(8) are also cautious in accepting the significance of many investigations of this sort.

In the present study, the sampling error is minimized in part by the relative size of the groups examined. The composition of the groups and the control population is fairly comparable in that the percentage of Mexicans in the hospital population is very similar to the percentage of Mexicans in the control population. It is probable that other ethnic groups are equally comparable.

The technical error based on the incidence of initially mistyped patients is 1.5%.

The possible association between blood group A and alcoholism is intriguing. Al-

¹ Colorado State Hospital, Pueblo, Colo.

though the male alcoholic patients outnumbered the female alcoholic patients 6 to 1, there is no difference between the sexes as far as the relative increase in blood group A is concerned. The number of alcoholic patients with Mexican surnames constitutes 25% of the total alcoholic group. As only 13.6% of the patients in the hospital have Mexican surnames and as blood group O predominates in this racial group, there seems to be further evidence to support the association between blood group A and alcoholism.

A common denominator in diseases which appear to be correlated with an increased incidence of blood group A may possibly be found in either the stomach or in the secretor status. Gastric carcinoma (1, 2) has been correlated with an increased frequency of blood group A. If the apparent increase in blood group A in alcoholics is confirmed, studies on the secretor status in both alcoholic patients and in those with gastric carcinoma should be conducted.

In summary, this study of the incidence of the ABO blood groups and Rh₀(D) type in schizophrenics, alcoholics and mental defectives tends to confirm the absence of

any correlation. There was no correlation between blood type Rh₀(D) and the three disorders studied. There seemed to be a significant association between alcoholism and blood group A. However the limitations of the study including the wide variations normally found in the incidence of blood groups, sampling errors and technical inaccuracy, underscore the rashness of arriving at definite conclusions on the basis of tentative findings.

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A LONG TERM EVALUATION OF CHLORPROMAZINE IN SIX CHRONIC SCHIZOPHRENIC PATIENTS

PATRICIA NEELY WOLD, M.D.¹

This study is an attempt to isolate the chemical effect of one tranquilizer, chlorpromazine, from the other factors possibly related to the shifting mental status of 6 chronic schizophrenic patients. An effort is made to arrive at some conclusion about the relationship between maintenance therapy and the quality of adjustment made by these patients.

Six female chronic schizophrenic patients were chosen, all of whom had been inmates of a large mental institution where individual attention was minimal. All but one had been hospitalized 5 years or more

previous to medication and all had relatives who were still actively interested in them. Five of the 6 had been treated in the hospital for periods of time varying from 10 weeks to 12 months; one was medicated at the time of discharge. They were seen every 3 or 4 weeks for 10 to 15 minutes over a period of 3½ years, being told that the purpose of the visit was to regulate the dosage of medication. The dose was determined by the amount necessary to control symptoms. Notes were made on important events in the patient's life as told by the patient or a relative; likewise symptomatology was judged both by the verbal report of the relative and observation in the interview.

¹ Depts. of Psychiatric Research of the Mass. Mental Health Center and the Metropolitan State Hospital, Boston 15, Mass.

When each patient had been out of the hospital for one year, she was given a supply of placebos in place of chlorpromazine. If it was obvious that the patient was experiencing a relapse, she was told that the dose of the "medicine" would be raised. Relatives and patients were encouraged to feel that this was the solution. The patients were hospitalized when necessary, medicated with chlorpromazine, and discharged as soon as their mental status was the same as before the placebo had been given.

The placebo was instituted a second time when the patients had clinically improved to the pre-placebo level as reported by their relatives or as evidenced by their obtaining a job.

Five of the 6 patients responded to the placebo with a major relapse involving severe social disorganization. Since the experiment was repeated twice for each patient, this represents a total of 10 instances of relapse. It would thus seem very unlikely that the original improvement was related to the placebo effect, but rather to the tranquilizer, chlorpromazine.

There was a widely varied but individually consistent period of time after the institution of a placebo until the full-

blown relapse occurred. The relapse periods in the 5 patients were 5 days, 20 days, 2 months, 4½ months, and 5 months both times that the placebo was given. The length of time was not related to the dosage required to maintain equilibrium or to the mental status.

The major relapses did not seem to be related to events in the patient's life. Interpersonal tension which caused the patient difficulty on placebos was handled appropriately when chlorpromazine was reinstituted. In one patient who was difficult to keep adequately medicated, the form of the hallucination which occurred while she was on chlorpromazine, seemed to be related to interpersonal tension; however the symptom lacked the severe disorganization of the placebo relapses.

The relapses in 3 cases started with symptoms of tiredness and insomnia, and resulted in severe social disorganization in all patients, in contrast to symptoms occurring during medication. The patient who had the most symptoms while on chlorpromazine was the most difficult one to keep adequately medicated, thus suggesting that the occurrence of the symptoms was related to inadequate medication.

HISTORICAL NOTES

THE HISTORY OF ELECTROTHERAPY AND ITS CORRELATION WITH MESMER'S ANIMAL MAGNETISM

JEROME M. SCHNECK, M.D.¹

During the preparation of my book, *A History of Psychiatry*, I found a significant historical correlation (1) between some 18th century experiences with electrotherapy and animal magnetism.

A number of physicians were using electricity therapeutically in mid-century (2). Its application was not confined to them. John Wesley obtained an electrical apparatus about 1750 and issued a publication in 1759. It was claimed, at that time, that hundreds and perhaps thousands of people benefited from electrotherapy. Middlesex Hospital was the first teaching institution to acquire an electrical machine (1767), followed by St. Bartholomew's and St. Thomas's. An "asylum" in Leicester owned an electrical device for treatment of patients and in 1788 a special therapy room was set up in this connection. In 1793 a London Electrical Dispensary was organized and 3,000 patients were said to have been treated within 10 years, one-half cured and most of the remainder relieved of their symptoms. The history of electrotherapy in some form had long preceded these efforts. Therapeutic use of the electric eel can be traced to the Greco-Roman period (3).

While the electrotherapy movement was developing, Franz Anton Mesmer (1734-1815) was synthesizing his theory of animal magnetism and treating patients with claims of success. In 1779 he published the famous *Mémoire sur la Découverte du Magnétisme Animal* with its classic 27 propositions (4). Note numbers 21 and 22:

This system will furnish fresh explanations as to the nature of Fire and Light, as well as the theory of attraction, ebb and flow, the magnet and electricity. . . It will make known that the

magnet and artificial electricity only have as regards illnesses, properties which they share with several other agents provided by Nature, and that if useful effects have been derived from the use of the latter, they are due to Animal Magnetism.

Mesmer has been regarded by some as a brilliant innovator and by others as lacking in scholarship (5). It is often acknowledged, nevertheless, that his concepts can be linked with some trends of the time. For example, disease as related to fluidistic disharmony has been compared to the irritability theory of Albrecht von Haller (1708-1777) and the excitation theory of John Brown (1735-1788) among others (6). That Mesmer gave thought to underlying essentials when comparing therapies of his time is evident in the propositions mentioned above. His interpretation was clearly slanted in the direction of his personal theoretical preferences which is usually true of most innovators. Even disregarding Mesmer's theory we find that he was probably still accurate in the fundamentals of his observations. The therapeutic attributes of 18th century electrotherapy and magnetism possessed the common denominator pertinent to animal magnetism. This common denominator consisted of the essential ingredients of the transference relationship and its role in fostering therapeutic change, aside from any other aspects in the devices employed which might also be effective. This is consistent with observations today in connection with psychological factors in modern electrotherapy. Interest in the psychological aspects of today's electroconvulsive methods followed soon after their introduction (7).

Electrical appliances frequently elicit varying degrees of convulsive reactions, of course, and these are dependent on several variables consistent with the therapeutic intent of the physician. A point of interest

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is that Mesmer was obtaining, and apparently favored, the production of convulsive reactions, called crises, in many of his patients. They were regarded as beneficial therapeutically. They were evoked by what we would regard as psychological measures in the use of the *baquet* (the tub filled with glass and iron filings in contact with metal rods held by patients in group therapy) or in contacts with any "magnetized" objects. The convulsions must have had much importance psychologically for such patients in relation to the dynamics of their illnesses. Even now it is significant to note differences of opinion regarding the pertinence or necessity of convulsive reactions in ECT in relation to their psychological and physiological desirability within the therapeutic regime. Taking all of these facts and opinions into consideration, we may focus special attention now, in connection with the treatment of psychological illness or illness with known structural change in addition to psychological manifestations, on proposition number 23 :

It will be seen from the facts, in accordance with the practical rules I shall draw up, that this principle can cure nervous disorders directly and other disorders indirectly.

Allowing for changing concepts of "cure" Mesmer had something to offer. As for the historical development of scientific ideas, the correlation between his animal magnetism and the history of electrotherapy with their allied psychodynamic themes seems deserving of recognition.

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COMMENT

GREGORY ZILBOORG

With the death of Gregory Zilboorg we record the loss of a good friend of many years. In Philadelphia at the 1959 meeting when we last saw him he was buoyant and active throughout the meetings. We knew that he had been seriously ill but we shared his hope that surgery he had recently undergone had cleared the way ahead. He was carrying on as if nothing had happened. He was not one to let health problems disturb his equanimity or, to the limit of possibility, his endeavor.

But the Fates were unkind. In a letter only two weeks before the end he wrote, with utter composure, of the unfortunate turn of events and the outcome he was approaching. "I am not doing any work to speak of"; he said, "I read a letter, I am cheerful. I don't even suffer moments of despondency." And so with even mind he finished his course.

A memorial of Dr. Zilboorg will appear in a later issue of the Journal.

A COLLABORATIVE RESEARCH PROGRAM BETWEEN SAINT ELIZABETH'S HOSPITAL AND NATIONAL INSTITUTES OF MENTAL HEALTH

The Clinical Neuropharmacology Research Center has been established at Saint Elizabeths to meet the long recognized need of the National Institute of Mental Health for a research center in a mental hospital setting and represents a collaborative research program between the two institutions, centered on the hospital. The main purpose is the study of the action of drugs on mental function and mental disorder.

The location of the Center at Saint Elizabeths Hospital was thought appropriate because here in a large and modern hospital abundant and varied clinical material would be available for clinical trials, as well as for special, intensive investigation of individual conditions and syndromes. Furthermore, it was thought desirable to expose investigators, working at whatever level or discipline, to the unique phenomena presented by mental illness in a mental hospital. These phenomena and their problems differ from, and are complementary to the picture usually presented by the private hospital, or the university clinic. It was therefore hoped that such mutual exposure would lead to the development of research and therapeutic tech-

niques applicable specifically to mental hospital populations; and to a more ready appreciation of the role of each in a common research program.

Essentially the plan is designed to break the deadlock of isolation between the scientist and the mental hospital, and the mental hospital and the growing points of the behavioral sciences. Also, the location of a research center within the Washington area, and within easy access of the Clinical Center in Bethesda should make for ready interaction between it and the resources and special services of the Clinical Center. The functions of the laboratories and clinical branches of the hospital, of the Clinical Neuropharmacology Research Center, and of the laboratories and branches of the National Institute of Mental Health in Bethesda are therefore envisioned as complementary and interdependent. A number of long range programs are planned, or in operation, with the active collaboration of these branches.

To ensure a clinical setting truly representative of the predominant hospital population, the Center was located in one of the older units of the hospital, the so-called William Alanson White Service. This is a

5-story building with some open and some closed wards, housing some 370 patients. The patient population is being steadily selected and sifted according to the needs of the research program.

Part of the ground floor, and the whole of the fifth floor of this service, were adapted for special research laboratories. The ground floor now includes laboratories of neurochemistry, neuropharmacology, electrophysiology, sensory physiology and neuroendocrinology. A laboratory to accommodate experimental animals for the study of the effects of drugs on animal behavior has been erected outside the electrophysiological laboratories. The whole of the fifth floor provides for the clinical parts of the program. Laboratories here include a small metabolic ward (complete with diet kitchen); clinical physiology laboratories; electroencephalographic and psychosomatic laboratories; psychometric laboratories; and a suite of rooms for interviewing, for long-term psychotherapy, for counselling, and for group therapy. On this floor are also the records and statistical offices (comprising modern data processing equipment) and offices for social scientists and secretarial help. All laboratories are finished and equipped according to the standards of the National Institutes.

At a more personal level, the day-to-day conduct of the Clinical research is carried out jointly by the staff of the Clinical Neuropharmacology Research Center and of Saint Elizabeths Hospital. Clinicians assigned to the Center by the N.I.M.H. work alongside their colleagues from the hospital, thus assuring closest possible contact with research problems.

The Chief of the Center serves as Director of Research of the hospital and Chairman of the hospital's Research Committee, whose function is to coordinate and promote clinical investigations in any part of the hospital and to submit to the Superintendent recommendations for their further development.

Research in a clinical area is inseparable from clinical care and, in the last analysis, it is the clinical care program that will reflect the usefulness or otherwise of its research program. There are already indications that the proximity of the basic sciences to the clinical area encourages the basic scientist's active interest in clinical problems, and the clinician's interest in scientific method. Moreover, as research techniques especially adapted to the study of clinical phenomena within a mental hospital are evolved they will take their proper place in the hospital training program and, it is hoped, thus lead to the creation of an academic setting within the confines of the hospital. The joint Saint Elizabeths-National Institute of Mental Health project could thus set a pattern for the future. Its measure of success, however, will inevitably depend upon the strength and evolution of the hospital it serves.

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CORRESPONDENCE

THE QUESTION OF PSYCHIATRIC TRAINING ABROAD

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : It has been said by Freyhan(1), and remarked by others(2, 3), that an American psychiatrist is apt to be struck by the differences in psychiatric theory and practice in foreign countries and that the foreign psychiatrist is often baffled by what he sees in the United States(4). Such differences have given rise to concern, even an admonition from Professor Bleuer(1), that they may result in the cessation of exchange of both communication and psychiatrists between America, Great Britain and the continent.

This situation is relatively new. In 1930 Mapother(5), having just returned from a visit to the United States, wrote that American psychiatrists "have the natural readiness to try anything once, but to me they seem neither credulous, nor given to making claims; in fact, they seem full of the 'enthusiasm without illusion' that is the true scientific spirit." Three years later in the 14th Maudsley Lecture, Adolf Meyer(6) spoke of the British contribution to American psychiatry. In the ensuing 15 years a number of British psychiatrists came to North America for postgraduate study, several returning to become the British exponents of the Feinsinger technic of short-term psychotherapy(7). And, in general, the exchange soon became more and more one-way, with few American psychiatrists going abroad for study and a feeling of separation becoming progressively more apparent. An English Professor(2) in 1953 referred to the differences in the evolution of British and American psychiatry as "differences . . . of quantity and tempo"; and several years ago another English psychiatrist(3), alluding to the growth of psychoanalytic psychiatry in the United States, made the comment that "a remarkable attempt has been made in many centers to ingest the whole system, python-like, into the body of academic opinion."

As a result of this separation, there has been in America, as Kanner suggests(8), a

loss of interest in basic clinical psychiatry and in the historical roots of modern psychiatry. Maciver and Redlich(9) have pointed out in a study of psychiatric practice not only a dichotomy in the theoretical orientation of American psychiatrists but also a relative lack of eclectics. And abroad, particularly in England, there has sprung up an intense distrust of psychoanalytic theories and psychotherapy in general(10). From this separation there have also arisen many distorted attitudes and conceptions, to the point that not a few American psychiatrists regard British and continental psychiatry as "descriptive" or, at best, existential; and *vice versa*, American psychiatry, as subjugated to an uncritical acceptance of psychodynamic theory and psychotherapy. Some effort has been made to bridge this gap in communication, especially in the areas of psychopharmacology and epidemiology; but little encouragement is given the American psychiatrist to obtain foreign training during his residency years. Few foundation grants, medical school travelling scholarships or governmental research or training stipends have been established for this purpose; and even in neurology where the tradition of a year's pilgrimage to the National Hospital, Queen Square, London, is long established, there are meager financial aids available. At best, there is the occasional medical society or academy of medicine which happens to have a scholarship or travel grant as a fossil from the days of the "American Medical Association of Vienna."

The value of foreign training in psychiatry has been stressed by many previous writers(11, 12, 13). But the lack of opportunity for such study cannot be emphasized or deplored sufficiently.

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A STATISTICAL STUDY OF FIRST ADMISSIONS WITH PSYCHONEUROSES IN NEW YORK STATE, 1949-1951

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

Sir: In his interesting article in the August issue of this Journal Malzberg states that the higher incidence of psychoneuroses among the Jewish population in comparison with other groups of our metropolitan population, such as Irish and Italian, has been attributed to the greater willingness by Jews to seek medical advice and, in particular, to a more favorable attitude towards psychiatry and psychiatrists. This is surely true and I believe that if we included the statistics about private psychiatric practice the incidence of psychoneuroses among Jews would be proportionately even much higher than calculated in Dr. Malzberg's study.

There is however a cultural conditioned

genetic-dynamic explanation for this discrepancy which can be proven statistically. The chief characteristic of psychoneurotic disorders (*Manual of Mental disorders* APA) is "anxiety which may be directly felt and expressed or which may be unconsciously and automatically controlled by the utilization of various psychological defense mechanisms. . . ."

The Jews as well as Irish, Italians and other population-groups have to deal with anxiety-producing problems. Besides becoming neurotic, there is another way of escape from "anxiety," namely to "narcotize" anxiety by becoming alcoholic. Now let us look at the racial differences of alcoholism as presented statistically by the Department of Mental Hygiene, New York State :

COMPARISON OF RACE DISTRIBUTION IN PRINCIPAL GROUPS OF MENTAL DISORDERS, 1951

<i>Mental Disorder</i>	<i>Per Cent of Total First Admissions of Each Race :</i>						
	<i>African</i>	<i>German</i>	<i>Hebrew</i>	<i>Irish</i>	<i>Italian</i>	<i>Slavonic</i>	<i>Mixed</i>
Alcoholic	7.2	5.0	0.5	12.1	2.8	6.7	6.5

There has been no remarkable change in these figures since that time. As a result of cultural factors the Jews do not use the escape of their anxiety-producing problems into alcohol to such an extent as the Irish or Italian. Although an increase of alcohol

use among the Jewish population has been observed the "psychoses due to alcohol" among Jews remains a "curiosum."

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P.O. Box 1453,
Middletown, N. Y.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: The statistics that Dr. Lanzkron presents are not as conclusive as he thinks. They are not rates of first admissions with alcoholic psychoses, *i.e.*, the number per 100,000 of each ethnic group, but percentages based upon total first admissions. The percentage may be high, but the rate may be low, or vice versa. Comparisons of the incidence of the alcoholic psychoses, as con-

trasted with psychoneuroses, are difficult to make because of the social factors which influence both treatment and hospitalization. Until a better measure of the true incidence of the psychoneuroses is available, hypotheses such as that suggested by Dr. Lanzkron are suggestive, but cannot be regarded as conclusive.

Benjamin Malzberg, M.D.,
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A COMMENT ON SWEDISH PSYCHIATRY

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: I was very surprised to read on page 83, vol. 116, July 1959, of *The American Journal of Psychiatry* a note according to which Swedish psychiatry is in a sad state and has not developed at the same rate as other special fields. Since I have had the chance to visit some Swedish psychiatric hospitals and all university clinics several times, particularly last spring, and to discuss psychiatry with Swedish psychiatrists exhaustively I should like to inform your readers with regard to my impressions. I found the standard of the Swedish mental hospitals I visited on an excellent level. They have been modernized from every possible point of view, and further modernization is planned. The back wards—always an important criterion for hospital care of the mentally sick—present a most happy homelike atmosphere. Occupational therapy is very well developed, the social life of the hospital patients is excellently organized. For the treatment of neurotic and "psychosomatic" patients there are splendidly equipped special clinics, wards and outpatient clinics. The social service for the patients is also well organized.

Pre- and postgraduate instruction in psychiatry is cared for very well and more time is given to it than in many other countries. Research work both in Swedish university clinics and in many Swedish state hospitals is carried out with the greatest exactitude. Publications on psychiatry are based on a vast quantity of clinical material and are conceived in a critical spirit. It is particularly impressive to see how much time many research students give to their studies before publishing them. It is not necessary to go to Sweden to recognize the pioneer research of Swedish psychiatrists in many fields, it is sufficient to look through the *Acta Psychiatrica et Neurologica Scandinavica* and its Supplements. It is correct to say that many Swedish psychiatrists follow trends in psychiatry which are not the same as in many other countries. This, however, does not lead to an isolation of Swedish psychiatry, but is on the contrary a very precious contribution to international progress in this field.

Prof. M. Bleuler,
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Zürich, Switzerland.

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : In the July issue of this Journal, Dr. Löfgren, in his comment on Prof. Kinberg's paper, referred to Swedish psychiatry as "barren and lacking in international contact" and stressed that its level was "not acceptable by modern standards." I have the privilege of some knowledge of Swedish psychiatry, and had the opportunity last winter to visit thoroughly all the university clinics and a number of other psychiatric institutions in Sweden. I feel it therefore to be my duty, as an independant observer, to make some comments on the paper by Dr. Löfgren, with whose opinion I strongly disagree. It is true that the late Prof. Sjöbrings psychopathology has still a great influence in Sweden. That holds true however only for certain universities and for certain aspects of his theory. His psychological "types" or, more exactly, "traits" system is considered as a convenient reference frame, and is now subjected to very thorough experimental researches, especially in Lund, using clinical, experimental psychological and somatometric techniques. Without going into details, Sjöbrings typology is not at all an "isolated" system, but has many connections with other European schools of thought (Pierre Janet in the first place). It is true too that psychiatry in Sweden is more somatically than psychodynamically oriented. I do not believe, however, that the somatic approach is so exclusive as could be inferred from Prof. Kinberg's paper and from Dr. Löfgren's letter. The development of clinical psychology in the last ten years is impressive, and the close cooperation between psychologists and psychiatrists, the support psychology receives from all the professors of psychiatry, and the scientific level of the papers published can compare favorably with the present state in the United States. Psychoanalytic concepts are not as widespread as in the United States, the number of trained psychoanalysts is small, but their proportion to the total number of psychiatrists is not

much below that in continental Europe. In the administrative, therapeutic, teaching, and research fields, psychiatry has attained in Sweden a very high level. The hospitals are generally extremely well planned and equipped, the State is presently providing large sums for their extension and modernization. There is a great concern about the social aspects of mental disease. The teaching at the graduate level is probably more extensive than in most European countries, and, in addition, series of lectures on medical psychology are given in the first years. Psychiatry is now considered in the medical schools as one of the main clinical subjects for the examinations, a situation probably unique in Europe. The level of research, as any reader of *Acta Psychiatrica et Neurologica* and of the published M.D. theses knows, is extremely high. The large amount of the material, the care in the clinical investigation, the planning of the experimental approach and of the statistical treatment, the thoroughness of the bibliography, are noteworthy. It is true that, with the exception of clinical psychology, the main lines of research are in the somatic field : biology of mental disease, biological therapy, genetics and population survey. In those fields Swedish psychiatry has gained international recognition. But it does not mean that Swedish psychiatry is isolated. Swedish psychiatrists are well acquainted with foreign literature, European as well as American. Many have travelled extensively and they are always open to new points of view. The contributions made by the present heads of university clinics and psychiatric institutions, as well as the work of younger psychiatrists are in themselves an eloquent proof of the originality of the Swedish psychiatric school. Originality is not a sign of isolation but of vitality.

Prof. agr. P. Pichot,
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NEWS AND NOTES

IOWA HONORS SEYMOUR VESTERMARK, M.D.—A bronze plaque honoring Dr. Vestermark has been mounted in the main corridor of the State Psychopathic Hospital according to Paul E. Huston, M.D., Chairman of the Department of Psychiatry and Director of the Psychopathic Hospital. This plaque reads:

In Memory
of

SEYMOUR DAY VESTERMARK, M.D.
State University of Iowa Medical Class of 1931
Born November 25, 1902
Died February 22, 1959

Distinguished graduate who, during 10 years as Chief of National Institute of Mental Health Training Branch, U.S.P.H., exerted a profound influence in the field of psychiatric training in the medical schools of the U.S.A.

DR. VISOTSKY HEADS CHICAGO MENTAL HEALTH SERVICE.—Dr. Harold M. Visotsky, assistant professor of psychiatry at the University of Illinois College of Medicine, has been appointed, effective Sept. 1, director of mental health for the City of Chicago. He will have charge of the mental health section of the Chicago Board of Health under the direction of Dr. Herman N. Bundesen, president.

Dr. Visotsky is the first full-time director appointed to this position. He has been coordinator of psychiatric training at the university since 1955 and consultant to the National Foundation, Polio Respiratory Center, U. of I. Hospital, as well as a consulting psychiatrist and a member of the educational faculty and committee in the residency training program at the Chicago State Hospital.

CORRECTION.—Information presented on page 171 of the clinical note entitled: "Drug Use-Rate in a State Mental Hospital" by John R. Whittier, *et al.*, American Journal of Psychiatry, 116, pages 169-171, 1959 is inaccurate. The two sentences preceding the summary, and the pertinent summary

content, should be corrected to read "By the end of the observation period, 61% of the total hospital population were receiving one or more of the drugs. Male patients on drugs represented 22% of the total hospital population, or 52% of the total male population. Female patients on drug represented 40% of the total hospital population and 68% of the total female population, all figures rounded to the nearest percentage point. Of the total, male, and female patients on drugs, 56%, 51% and 59% respectively were receiving chlorpromazine." As principal author, I am responsible for the inaccuracies in the percentage figures, which appeared during several revisions of the article prior to submission and were missed in final copy. I am indebted to the critical acumen of Matthew Kartch, 4th year medical student at Albert Einstein College of Medicine, for bringing the situation to my notice.

JOHN R. WHITTIER, M.D.
Director of Psychiatric Research
Creedmoor Institute for
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CONNECTICUT SEMINAR IN PSYCHIATRY, NEUROLOGY.—September 16, 1959-April 20, 1960. Sponsored by the Connecticut Dept. of Mental Health and the Dept. of Psychiatry of the Yale School of Medicine and in co-operation with other hospitals and training schools. Many eminent speakers and instructors have been engaged for each of the two sections of this seminar. This course is approved for Category 1 credit by the Academy of General Practice. For further information, address the Assistant Dean for Postgraduate Medical Education, 333 Cedar St., New Haven 11, Conn.

MASSACHUSETTS GENERAL HOSPITAL RESEARCH ON MENTAL RETARDATION.—A gift of \$1,000,000 from the Joseph P. Kennedy, Jr. Memorial Foundation for the establishment of the Joseph P. Kennedy, Jr. Laboratories for Research on Mental Retardation at the Massachusetts General Hospital has been announced. One-half will be spent for

the construction of the laboratories and the other half will serve as an endowment to provide continuing operating funds.

This is the first of the endowed scientific researchships planned under the Anniversary Program in observance of the 150th birthday of the Massachusetts General Hospital in 1961.

INDIAN COLLEGE STUDENTS' ATTITUDES TO MARRIAGE.—A questionnaire study was conducted by Principal H. K. Trivedi and associates of S. B. Garda College and B. P. Baria Science Institute, Navsari, India, and reported in *The Guardian*, the journal of those institutions, for March, 1959.

Of the 531 students volunteering 426 were men (24 of whom, married) and 120 women (7 married). The married students were all Hindus, 68 of the unmarried men from Muslim and Parsee minorities.

The students strongly favored completion of education before marriage. They also favored family planning and limiting the children (2 sons, 1 daughter). They realized the evils of the Dowry system. The women gave more importance to the social status of the spouse than did the men.

It is interesting to note that of the unmarried students 48% of the men and 55% of the women stated that they would not be prepared to take a spouse whose horoscope differed from their own.

This issue of *The Guardian* reports also the special features of the annual meeting of the College and Institute, honoring Professor Trivedi the founder of these institutions and who is responsible for their remarkable development. The occasion was especially notable by reason of the presence of His Excellency, Shree Sri Prakasa, Governor of Bombay State, who presented to Principal Trivedi, professor of philosophy and psychology, a handsomely bound *Festschrift* containing 73 tributes from educa-

tionalists and other eminent persons in various walks of life commemorating his 45 years of distinguished service to higher education.

NATIONAL ASSOCIATION FOR MENTAL HEALTH, INC.—The appointment of Lawrence J. Linck of Chicago as executive director of the National Association for Mental Health has been announced by the organization's president, Judge Luther Alverson. Mr. Linck has previously served as a professional management counselor with offices in Chicago, and as executive director of the National Society for Crippled Children and Adults from 1945 to 1956.

He has served as special consultant to the U. S. Public Health Service, and consultant to the Office of Vocational Rehabilitation in the U. S. Department of Health, Education and Welfare.

AMERICAN PSYCHOSOMATIC SOCIETY.—The Society will hold its 17th annual meeting at the Sheraton-Mt. Royal Hotel in Montreal, Canada, on Saturday and Sunday, March 26 and 27, 1960.

The Program Committee would like to receive titles and abstracts of papers for consideration for the program no later than December 1, 1959. The time for presentation of each paper will be 10 or 20 minutes.

Abstracts, of two or three pages, in 9 copies, should be submitted to the Chairman of the Program Committee at 265 Nassau Road, Roosevelt, N. Y.

Eric D. Wittkower, M.D.,
Chairman, Program Committee

Correction.—Three pages of plates illustrating the article by Dr. Nathan Malamud, pages 215 to 218 of the September Journal were, through a printer's error misplaced and inserted between pages 220 and 221.

BOOK REVIEWS

YEARBOOK OF NEUROLOGY, PSYCHIATRY AND NEUROSURGERY (1958-1958). By Roland P. MacKay, M.D. (Neurology), S. Bernard Wortis, M.D. (Psychiatry), Oscar Sugar, M.D. (Neurosurgery). (Chicago: The Year Book Publishers, 1959, pp. 623. \$8.50.)

Neurology. Among numerous developments of the year, Mackay puts first in importance the continuing investigation and differentiation of the neutropic viruses, of which the polioviruses are the most neurotropic. Reports on the Salk vaccine are "essentially unanimous in citing a 75% effectiveness against paralysis . . . [and] an immunity approximately as enduring as that from 'natural infection'."

Clinical and experimental studies reported in this Year Book, including reports of pathologic changes found in Hiroshima and Nagasaki victims, point up sharply the need of knowledge of radiation effects now and in the future.

Multiple sclerosis, although "one of the most actively studied of human diseases," is still a mystery, insofar as etiology is concerned.

Mackay calls attention to the publication of the "handsome and authoritative volume," *Neuropathology* by J. G. Greenfield and associates, and the lamented death of the senior editor.

Psychiatry. Psychopharmacology and physiologic treatment methods still occupy the predominant interest of psychiatrists everywhere. Wortis, in understatement, mentions 18 new drugs to be added to the list given in the last preceding Year Book.

The present status of insulin therapy was surveyed in the International Conference on Insulin Treatment in Psychiatry in New York City in the autumn of 1958 [This Symposium, edited by Rinkel and Himwich, is published by the Philosophical Library, 1959].

There is much research on biochemical abnormalities in possible relation to schizophrenia, but no generally accepted conclusions have been reached. There has also been increasing attention to the biochemistry of alcoholism.

Instead of trying to summarize the findings in a vast number of reports, Wortis gives a long bibliography (12 pp.) of publications in 1958 dealing with the several fields in psychiatry.

This section contains reports on psychiatry

in Asia and the Middle East, Germany, Portugal, Soviet Union, Finland and Denmark.

Neuropathology. Oscar Sugar directs the introduction to this section to a recasting of the nature of the symposium published in several Soviet journals. He refers to an article in *Science* (Oct. 10, 1958) that pointed out the necessity for evaluating Soviet neuropathology of having a thorough knowledge of the regional terminology of both languages and of the scientific slang. The reader must be aware of the necessity for a tolerance to official philosophy, including the worship of Party. Evaluation of Party doctrine is reported as part of psychotherapy in some areas.

The neurological and neurosurgical sections of the Year Book contain numerous short papers.
C. B. F.

BODY IMAGE AND PERSONALITY. By Seymour Fisher and Sidney I. Cleveland. Princeton, N. J.: D. Van Nostrand Co., 1958, pp. 420. \$9.25.)

If one reads between the lines of the research protocols, the scientific tables, and the statistical analyses in this volume, one finds the fascinating evolution of a research idea. The two authors, both psychologists at the Baylor University College of Medicine, had become interested in the concept of the body image, particularly as it relates to ego or boundary strength, and, in an initial study of patients with rheumatoid arthritis, they found that, of the several tests explored, the Rorschach test gave the most information regarding the body image. A review of the existing literature, which they summarize in this volume, revealed how little work had been done at the time on the manner in which the individual organizes perceptions about himself and about his body. The authors then launched into further research on how concepts about the body image might relate to personality structure, behavior, and site of psychosomatic symptoms.

Their first hypothesis, that patients with psychosomatic symptoms involving the body exterior would conceive of their bodies as surrounded by a protective, defensive wall, was supported by a series of studies of patients and their various psychosomatic disturbances. They also obtained evidence supporting their second hypothesis that the body image differences themselves played some etiological role in the choice of internal versus exterior symptom sites. When further studies on a group of normal

subjects substantiated these results, they proceeded to a number of validating explorations which indicated the consistency and significance of their measurements.

In a series of researches regarding personality and behavior, they found that high barrier scores correlated well with a higher level of goal-setting, a need for task completion, less suggestibility, freedom to manifest anger, self-expressiveness, greater tolerance of stress, a higher interest in work activity that involved personal communication, and that such persons were products of families where there occurred greater structuring of values and goals, with more interest in work and more stable marriages. Group studies indicated that their philosophy was characterized by firmness, definiteness, assertiveness, initiative, more leadership, and ability to talk. They were also more friendly and democratic, with greater humanitarianism.

A study of controls, neurotics, and psychotics revealed a decreasing barrier score as one proceeded towards the psychotic population. The authors follow this report with a discussion of the importance of the body image, its relationship to Freud's concept of the ego, and to the implications in the treatment of regressed schizophrenics, where attention to their body seems to be of paramount importance.

Further studies in family patterns revealed that low barrier persons are exposed to a family atmosphere that not only provides few definite identification models, but which is also characterized by relatively high insecurity and inappropriate rigidity. These people tend to see their parents in a threatening and fear-inspiring manner. Sex differences are revealed at different ages, in that lower scores occur in boys from 5 to 7, and in girls from 10 to 13, while in the intervening years they are the same. The authors relate this characteristic to Oedipal conflicts in the boys and earlier puberty in the girls. Cross-cultural studies indicated that high barrier groups were alike in that they permitted relatively later impulse satisfaction during the first few years of life than does the modern Western mode of civilization, that they provided the individual with more definite and less conflictual value models, but that they later demanded more rapid independence. With the Western tradition falling lowest on the barrier scale, searching questions inevitably arise.

Two more studies are reported. One finds a significant relationship between barrier scores and the location of cancer, while the other deals with various physiological manifestations. The most important of these was the study of general reactivity following the ideas of Fun-

kenstein, which indicated that high and low barrier individuals went in opposing directions in tests of various body reactions. An attempt was made to evaluate how these responses might be organized neurologically. It is known that passive personalities have a high alpha index in the EEG. The authors' investigation indicated that low barrier patients tended to be more passive and also had a higher alpha index. It was then speculated that high barrier individuals have a more elevated level of striate muscle excitation, and therefore may arouse more consistently the reticular formation through proprioceptive stimulation.

This book concludes with an excellent summary chapter. It also contains an appendix with certain Rorschach protocols, a bibliography of 360 items, and a subject and name index. This excellent work has brought much more clearly into focus another frame of reference for understanding personality development and function. It has presented much stimulating evidence, but, even more important, it has opened the doors to further research projects.

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PERSONALITY CHANGE AND DEVELOPMENT AS MEASURED BY THE PROJECTIVE TECHNIQUES.
By Molly Harrower, Ph.D. (New York: Grune and Stratton, 1958, pp. 383, \$10.00.)

Research minded practitioners will find this contribution quite challenging. Using her many years of experience, the author makes a serious attempt to discover answers to some intriguing questions concerning projective techniques. Some of these questions are: To what extent does projective material actually mirror reported change in behavioral adjustment and change in subjective experience? If positive changes are found, do they result from a dropping out of pathologic responses in the second test record, from an increase in positive indices of adjustment, or from a combination of both? How does an individual change during periods of normal growth and the passage of 5, 10 and 15 years? What about the similarities or differences in personality brought about through growth, maturation and life experiences on one hand, and various forms of psychotherapy on the other? What about changes introduced by psychotherapeutic techniques which are not found as a result of other experiences?

Raw data are provided in order that the reader may make personal judgments. Essentially, this volume is at the documentary level,

since the author believes that until there is sufficient evidence of what actually occurs, extensive theorizing is out of the question.

ARTHUR LERNER, Ph.D.,
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EPILEPSIE. By J. A. Chavany. (Paris : Masson & Cie, 1958, pp. 353. 2.800 fr.)

This monograph attempts to deal with all the different aspects of epileptic disorders, although emphasis is placed on clinical manifestations. The first part of the book deals with the clinical description of epileptic seizures. The account of cases is colorful and precise. After dealing with the classical grand and petit mal seizures, the author describes the focal episodes or parietal, temporal and occipital origin. Much of the material is discussed in light of work done by Penfield.

The existence of a particular "epileptic personality" and an "epileptic dementia" is accepted by the author although the reasons for doing so are not clear. The underlying assumption seems to be that "essential" or "idiopathic" epilepsy is a disease entity *per se*, rather than a manifestation of some known or unknown etiologic process.

The author attempts to establish types of seizures which at times seem rather arbitrary and novel. For example "morpheic epilepsy" according to him is characterized by nocturnal attacks, frequent mental and endocrine disturbances and heredofamilial traits, whereas cases predominantly nocturnal but with an occasional diurnal attack are automatically eliminated from this group. Other sleep phenomena, like somnambulism, nocturnal terrors, transient abdominal pains and frequent dreams are somehow related to this entity called "morpheic epilepsy." The EEG is reported to reveal sharp waves, spikes or "trapezoid waves" in the temporal lobe and is held to be a "specific anomaly." Also it is not entirely clear from the text if the author believes narcolepsy and "narcoleptic epilepsy" to be one or two different entities, but after a brief discussion of the problem the conclusion seems to be that there are two different conditions and the best way to tell them apart is by a therapeutic trial. One would have desired a closer discussion of the pathogenesis as done in the past by Wilson, Adie, and others, instead of a general statement that there is a supposedly exaggerated "reactivity of the hypnic function" in epilepsy.

The epileptic phenomena of young children are treated in great detail. The author recommends not attaching the word "epilepsy" to just any convulsive episode in the young infant

for "humanitarian" and "practical" reasons since such a label may have painful consequences for the patient's future.

The concept of "late epilepsy" is also examined. In two thirds of the patients whose seizures begin after 25 the etiology can be determined, but in the remaining one third the cause cannot be established and hence the author would classify these as "essential epilepsy." A "true senile epilepsy" is described although difficult to separate this entity from seizures secondary to cerebrovascular disease.

The hereditary aspects of epilepsy are based on the author's vast clinical experience. The work of Lennox on twins is amply quoted. The conclusion is that "essential epilepsy" although a disease entity, is not inherited as such but only as a predisposition to convulse regardless of the etiology.

The chapter on EEG is excellent and the treatment of the differential diagnosis is adequate. When dealing with syncope and related conditions, there is no mention however of the "tussive syncope" or "ictus laryngeus." When discussing "functional hypoglycemia" the author states that this disorder occurs in poorly nourished individuals, which is not the experience of the present reviewer.

It is unfortunate that such a comprehensive and informative monograph should be marred by minor oversights. There is a complete absence of illustrations and figures. Another instance is that quotations from the French literature are given full bibliographic notice while work published in English or German, except for a single note in page 272, is usually mentioned without reference.

The book however, is an outstanding piece of clinical insight and will prove to be of invaluable assistance to the neurologist, the internist and the general practitioner.

JOSE M. SEZARRA, M.D.,
Boston, Mass.

THE CRIMINAL MIND. A Study of Communication between Criminal Law and Psychiatry. By Philip Q. Roche, M.D. (New York : Farrar, Straus & Cudahy, 1958, pp. 299, \$5.00.)

By his work in forensic psychiatry and by his writings Dr. Roche has gained the confidence of the courts and of the legal profession in Pennsylvania. From 1934 to 1945 he did psychiatric work at the Eastern State Penitentiary in Philadelphia. As a witness in court he is held in high regard by lawyers, and judges have sought his advice on sentencing. In an interesting paper "Dr. Woodhouse Meets Daniel McNaghten" he pointed out a shocking

miscarriage of justice caused by disregard of elementary psychiatric facts: a physician who suffered from a psychosis with delusions was nevertheless found guilty of murder in the first degree.

The Criminal Mind is an expanded statement of the Fifth Annual Isaac Ray Award lectures delivered by Dr. Roche at the University of Michigan in 1957. It is a survey of the theoretical problems of forensic psychiatry frankly focused on "the subjective element of crime." As the book's subtitle states, the author examines especially the question of the communication between criminal law and psychiatry. A good deal of recent literature is carefully considered and pertinent cases are discussed. Some of them the author saw himself; others include the Gibbs case in which the late Dr. Strecker testified, which is well described in Richard Gehman's *A Murder in Paradise*.

Dr. Roche has a definite point of view which he sets forth clearly: he has come to the conclusion that the use of psychiatry as part of the public adversary system of criminal justice should be strictly limited or abolished, while its function in pre-trial and post-trial phases should be enlarged. He is most pessimistic about any useful role for the psychiatrist in the courtroom. The use of psychiatry should be restricted, he feels, to these aspects of the administration of criminal law: "(1) advisory on the question of triability of the accused, (2) informative and advisory leading to appropriate disposition of the convicted, (3) provision of techniques for changing convicted persons in the direction of self awareness and reform, and (4) advisory on questions of release of convicted persons."

One of Dr. Roche's theses is that criminals and mentally ill persons are not basically different, but differ only in the manner we deal with them. He finds that the law is public-centered, while psychiatry is individual-centered. His view of the essential relation between law and psychology is family-centered: "The law takes over where the parent leaves off" and "... criminal justice is a continuation of child-rearing indoctrination. ..."

Because it discusses the relevant questions fairly and clearly, Dr. Roche's book can be read with profit by both psychiatrists and lawyers. Throughout his exposition he is not controversial in any way. But the subject matter itself inevitably is controversial. In fact, forensic psychiatry at this time is the most crucial point of controversy in psychiatry. What we disagree about is not so much opinions as facts. Ninety percent of what is discussed in

theory is dynamically and psychoanalytically oriented, as in this book. What is actually practiced in trials and prisons, however, is 90% based on a psychiatry which recognizes only 3 or 4 diagnoses—and those only when they lead to totally disabling and deteriorating conditions. This psychiatry, or alienism, is more rigid and antiquated than the McNaghten rules of the lawyers. Just now a young man clearly suffering from catathymic crisis was permitted to commit suicide in the Massachusetts death house.

Like many other psychiatrists, the author condemns the McNaghten rules totally and unconditionally. Long experience has taught me, however, that many other things come first, before a change in the legal definition of insanity can do any good whatsoever. I have taken comfort from the fact that men like Sir Norwood East, Professor Jerome Hall and Dr. Clarence B. Farrar share this view. Unfortunately serious books like this by Dr. Roche are conditioning judges and the legal profession to accept subjective and highly individualistic reasoning. That interferes with democratic justice: A more objective and strictly social orientation would be necessary: clinical facts instead of speculations. As far as the role of the psychiatrist in the trial is concerned, it is of course not easy for psychiatrists used to sitting behind a couch or an electroshock machine to testify from a witness stand in court. They find it hard to forego their highly individualistic authoritarianism. But do not the often friendless and moneyless mentally diseased persons who have fallen into crime need somebody in the trial to fight for their right to live?

The Isaac Ray lectures so far have predominantly leaned toward the point of view expressed by Dr. Roche. They have not faced the grave abuses of psychiatry, and have leaned heavily on the subjective and individualistic side, finding more to criticize in the law than in the present state of psychiatry itself. The point of view of the as yet small minority which demonstrates by clinical research the dialectic interaction between conscious, unconscious and social forces in the causation of crime, has never found expression in these lectures. Perhaps it is good so. Perhaps the super-analytic, super-individualistic trend will have to run its course before a more strictly objective clinical and social standpoint is necessitated by the very jungle of legal insanity which now prevails.

FREDERIC WERTHAM, M.D.,
New York, N. Y.

THE DIVINE WIND: JAPAN'S KAMIKAZE FORCE IN WORLD WAR II. By Rikihei Inoguchi, Tadashi Nakajima, and Roger Pineau. (Annapolis: United States Naval Institute, 1958, \$4.50.)

In the last 9 months of World War II there occurred one of history's greatest mass suicides. Twelve hundred and twenty-eight Japanese Kamikaze pilots flew their bomb laden planes on one way flights to crash bomb—or attempt to crash bomb—them into U. S. battleships. Here was suicide which, as much as any, demonstrated the wish to kill and the wish to be killed, and which was unsurpassed in modern Japanese history. The Japanese "near death" tactics of a "death-defying" unit blockading Port Arthur in 1905, and midget submarines attacking Pearl Harbor in December, 1941, had left survival chances for the "death-defying warriors." With the Kamikazes there was only the certainty that the pilot would die. The Japanese Banzai charges had been suddenly ordered, swiftly executed, leaving the suicider little chance to dwell on his fate. The Kamikazes were systematically organized, and were protracted over a period of months. An American Admiral, in his foreword to this book, recalls, "Among those of us who were there, in the Philippines and at Okinawa, I doubt if there is anyone who can depict with complete clarity our mixed emotions as we watched a man about to die—a man *determined* to die in order that he might destroy us in the process. There was a hypnotic fascination to a sight so alien to our Western philosophy." The "hypnotic fascination" was that, however "alien," the Kamikazes originated in the death instinct that Freud had postulated is in all of us.

How, in this instance, did the death instinct gain such dominance? Written by 2 Japanese officers who helped organize the Kamikazes, this book is undistinguished in literary style and shuns any psychological probing. Yet it adumbrates more fully than any previous English account the topical conditions and some of the forces of Japanese culture which fused to replace the will to live by a will to die.

Kamikaze is named for the "Divine Wind" that had saved Japan from Mongol invasion in 1281. In October 1944, when the Americans were invading the Philippines and Japanese defeat loomed, Admiral Onishi, an old veteran Japanese imperialist, formed 23 young veteran Japanese fighter pilots into the first Kamikazes. The pilots had seen most of their comrades killed in combat, and confronted by proliferating American planes and skilled American pilots, had felt increasingly impotent. Onishi

first told them that their suicides would potentially turn the tide of events and achieve victory. He then dubbed the pilots "gods without earthly desires" (hence immortal), now the most important people in Japan, whose deeds would be immediately reported to the Emperor and nation, and then inscribed in the Yasukuni Shrine to Nippon's departed warriors. Five seconds after hearing Onishi's plan, Lt. Seki, chosen to lead the first Kamikazes, replied without the slightest falter, "You absolutely must let me do it." And most of the first 23 seemed to have been equally enthused.

After the loss of the Philippines, Onishi, no longer promising victory, could only tell the Kamikazes: "Even if we are defeated, the noble spirit of this Kamikaze attack Corps will keep our homeland from ruin. Without this spirit, ruin would certainly follow defeat." The first eager 23 fliers, now dead, were replaced by raw, inexperienced men. "Coercion" was used to recruit them—we are not told just how this operated, and many of these recruits were "disturbed" over the idea of dying; again we are not given details. In the end, we are told, these disturbances were resolved and replaced by a sort of mania and eagerness to die. Before final flight there was the final gesture of a glass of wine and a rare final good meal.

Although we are not given psychological profiles of any of the pilots, it seems that, in the absence of any hope of victory, an important factor which made men Kamikazes was the Confucian precept of unquestioning obedience to elders and superiors, which, in Japan, had been perverted to maintain a rigid caste. In the small selection of last letters home to parents, while there is no mention of wife or sweetheart, there is a constant play of gratitude to the parents, a sense of not having performed well for them that now, responding to Admiral Onishi's summons, will be rectified. Wrote one pilot: How I appreciate the chance to die like a man! . . . thank you, my parents, for the 23 years during which you have cared for me and inspired me. I hope that my present deed will in some small way repay what you have done for me." There is a suggestion that hostility to a parent may be expressed in a Kamikaze act: a pilot "brought up by a step-mother, his youth had not been a particularly happy one" writes his father: "as death approaches my only regret is that I have never been able to do anything good for you in my life . . . During my final plunge, though you will not hear it, you may be sure that I will be saying 'chichiue' (revered father) to you, and thinking of all you have done for me."

By August 1945, the 1,228 Kamikazes had

sunk 34 U. S. ships, damaged 288, taken a heavy toll of U. S. life, and completely failed to halt the American advance. Then the Emperor ordered surrender and Onishi committed hari-kari.

Thanatos versus Eros! After the war Japanese Eros reacted against Kamikaze Thanatos, and many Japanese criticized the Kamikazes. Wrote the Japanese philosopher Suzuki: The Japanese military, in asking the people to obey them, presented them with the Samurai ideal of killing and dying, with ideas of "divine glory of his Majesty" "the Divine nation" "the Holy war," with gods of war, all of which were the products of Japan's insularity. But, writes Suzuki, the military neglected or ignored such truly universal ideas as "love, humanity, and mercy." Yet, in 1959 a Tokyo psychiatrist, Dr. Tsunehisa Takeyama, pointed out that in Japanese culture the Thanitos, which produced the Kamikazes, is today responsible for Japan's high rate of suicide. Though Japanese youth no longer commit suicide in airplanes, in the 15-25 age group (the age group of the Kamikaze pilots) suicide, taking precedence over death by accidents and tuberculosis, is the leading cause of death.

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PROGRESS IN PSYCHOTHERAPY, VOL. 3: TECHNIQUES OF PSYCHOTHERAPY. Edited by Jules H. Masserman, M.D., and J. L. Moreno, M.D. (New York: Grune and Stratton, 1958, pp. 324. \$8.50.)

By this time the rationale for the publication of the annual volume on progress in psychotherapy scarcely needs explanation or justification. These selections from very broad areas in an even broader field provide the busy psychiatrist with an excellent, well-chosen cross-section of modern activities and thinking in the admittedly difficult and confusing field of psychotherapy. In this reviewer's opinion, Drs. Masserman and Moreno have constantly done an excellent job in selecting significant material and arranging it in such a way as to make it useful to the reader.

As in previous volumes, the present one is divided into several parts: in this case, "History," "Rationale and Methods," "Special Techniques," "Psychopharmacology," and "Developments Abroad," with, of course, author and subject indices covering the entire volume.

In the first section on the history of psychotherapy, Drs. Vieth and Lewis provide 2 articles which concisely summarize the history of psychotherapy with some new and colorful

anecdotes on temple inscriptions and descriptions of mental disorders.

In the second section, "Rationale and Methods," the articles by Frank and Diethelm really belong together since they have to do with dynamic psychotherapy, particularly as it relates to the interreaction between the therapist and the patient and the biases which each brings to this relationship. Ehrenwald takes up another aspect of an area in which both Dr. Frank and Dr. Diethelm have indicated some interest; namely, the problems of scientific methodology in psychotherapy. The use of the family group and family therapy and the general problem of the social aspects of psychotherapy in the United States are covered in the articles by Ackerman and Behrens, on the one hand, and Redlich on the other. All these papers have in common a very important emphasis on the desirability of eliminating doctrinaire influences wherever these are found to operate against the vitality which should be the essence of psychotherapy.

The last paper in this section on psychodrama by Moreno could have been placed in the next section, but since it deals with fundamental rules of psychodrama, probably could justifiably be included here. The detailed discussion of various psychodramatic techniques and some definitions of specific sub-techniques, will prove interesting to most readers.

In the third section on special techniques, there is a smorgasbord which ranges from linguistics through projective tests, music therapy, dance therapy, and such matters as psychotherapy from the point of view of nursing and marriage counselling, and moves on into such special fields as psychiatry and the ministry, the psychiatry of the adolescent, "bifocal" group therapy, and the special problems of rehabilitation and military service. Various matters are admirably discussed in a series of short articles by extremely competent authors.

The anthropological approach which is discussed in a short paper at the end of this section, actually concentrates on a very small portion of the anthropological approach as might be expected in a section which attempts to provide the reader with a taste of the various approaches. It is, however, useful to consider anthropology in connection with the specific problems of marriage and the use of this point of view in evaluation of clinical material.

In Section Four, "Psychopharmacology," there are excellent summaries of the various present developments in psychopharmacology and in the biological and pharmacological aspects of schizophrenia. Of considerable general

use are articles by Kurland on the placebo, and Wickler on the methodology of research.

In the last section there are 6 papers dealing with developments abroad, the first of which is general in flavor, the others being specifically directed at situations in various countries. This is a move in the direction of psychiatric understanding across borders which justifies a good deal of underlining and emphasis in all of our literature. Dr. Masserman, in his summary of the section on psychotherapeutic progress in Latin America, makes an eloquent plea for better interchange of written communications, better translation services, and increased visits by psychiatrists of the various countries so that communication can be improved and maintained.

In essence, this volume of *Progress in Psychotherapy* continues to provide a useful service to readers in psychiatry and is a worthy addition to the series of volumes edited by Drs. Moreno and Masserman.

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University of Utah

PROGRESS IN PSYCHOTHERAPY, VOL. 4 : SOCIAL PSYCHOTHERAPY. Edited by Jules H. Masserman, M.D., and J. L. Moreno, M.D. (New York : Grune and Stratton, 1959, pp. 361. \$8.75.)

The fourth volume in this series is now available and its contents include an introduction by J. L. Moreno; sections on Fundamentals of Psychotherapy ; Methods of Social Psychotherapy ; Special Techniques ; Developments Abroad ; and a final section, Review and Integration, consisting of an article by Jules H. Masserman, "Science, Psychiatry and Religion." The intervening four parts contain more than 35 articles by specialists in psychotherapy.

A.C.

SELECTED WRITINGS OF JOHN HUGHLINGS JACKSON. Edited by James Taylor. 2 vols. (New York : Basic Books, pp. 500 and 510. \$15.00 the set.)

From the middle of the 20th century it is difficult to comprehend the magnitude and importance of the contribution of John Hughlings Jackson. In 1859, at the age of 24, he went to London, uncertain whether he should practice medicine or study philosophy. Fortunately he did both, becoming interested in the organization of the brain and the relationship between structure and function.

Jackson arrived in London at the beginning of the revolution of medical thought that gave birth to modern scientific medicine. Virchow had published his *Cellular Pathology* the preceding year, but the work of Pasteur and Koch

was still a decade away. During the year that Jackson moved to London Darwin published *On the Origin of Species*, which caused a philosophical and theological controversy that is still reverberating. That same year the National Hospital, Queen Square, was founded, but it was not till 1862 that Hughlings Jackson was appointed to its staff. Even before this his interests were directed toward the nervous system. At that time nothing was known of cerebral localization, and Jackson's conclusions regarding the motor cortex antedated by several years the experimental demonstrations by Fritsch and Hitzig. Jackson's careful, systematic observations, coupled with his brilliant interpretations of their significance, quickly placed him in the forefront of neurological thought. He was not content to report isolated facts, but utilized his philosophical training and produced an integrated concept of the relation between brain, mind, consciousness and body.

This philosophical approach has had a widespread influence on neurological thought, while his writing on the organization of the mind and levels of integration form the basis for much of the modern psychiatric theory.

Jackson published more than 350 papers, many of them in obscure journals with a limited circulation, so that much of his work is not readily available. Realizing the importance of his contributions two volumes, amounting to about 1,000 quarto pages, were published by James Taylor in 1931. The demand was large and it has been out of print for several years. The republication of these volumes emphasizes the importance of Jackson's work. Although some of the details of his physiological conclusions are no longer accepted, his views upon the organization of the mind and its relation to the nervous system are valid. Every neurologist and psychiatrist will find a study of these papers quite rewarding.

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VERDICT FOR THE DOCTOR. By Winthrop and Frances Neilson. (New York : Hastings House, 1959, pp. 1x + 245 incl. bibliogr. and index. \$4.50).

This is the story of a *cause célèbre* of particular interest to physicians, lawyers, journalists, sociologists, and any one who would like to read a profoundly moving story that happens to be true. It is of special interest to psychiatrists because it is the case of Benjamin Rush, who after long enduring malicious attacks in

print by an English free-lance writer, William Cobbett, finally brought suit charging libel, and was vindicated.

The case came to trial before the Supreme Court of Pennsylvania, Friday, December 13, 1799, in the celebrated State House, now Independence Hall.

The main issue was Rush's theory of treatment—heroic purging and copious bleeding—particularly as practiced by him during the frightful yellow fever epidemics in Philadelphia in 1793 and again in 1797. "The times are ominous indeed, when quack to quack cries purge and bleed!" This statement, with obvious reference to Rush, was quoted from Cobbett's writings by plaintiff's counsel during the trial. Defence counsel argued that this and many other intemperately abusive expressions used by Cobbett were not intended as personal attacks on the doctor but on his system of medicine which not only the defendant but some of the well known doctors of the community condemned. This was a weak defence however in the light of another quotation from Cobbett's writings referring to Rush: "I will persecute him while living, and his memory after death."

Cobbett was a fiery tempered Englishman who was most happy when he could attack some one or some thing. He had set up a printing establishment and bookstore in Philadelphia and brought out a periodical publication which he called *Porcupine's Gazette*. He had adopted the pen name Peter Porcupine as fairly suited to his personality. Freedom of speech and freedom of the press received exaggerated reverence at that period in American history, and Dr. Rush and his family had been caused untold suffering by the venomous assaults in *Porcupine's Gazette*. No credit was

given to the fact that during that awful summer of 1793 when all who could were fleeing from the afflicted city, Benjamin Rush was one of the few who remained at their posts, suffered himself from the contagion, and in entire ignorance of the cause of the epidemic, applied the measures he considered to be empirically the most useful.

When the evidence was all in Judge Shippen's charge to the jury amounted to conviction of the defendant, who five days before the trial had left his case in his lawyer's hands and fled to New York. The judge pronounced: "The counts laid in the declaration are fully proved by the publications, which are certainly libelous. . . . The liberty of the press, gentlemen, is a valuable right in any free country, and ought never to be unduly restrained. But when it is perverted to the purpose of private slander, it then becomes a most destructive engine in the hands of unprincipled men." He instructed the jury that it was proper to give not only "compensatory, but exemplary damages, thus stopping the growing progress of this daring crime."

It was candle light when the jury returned.

"The verdict of the jury was in favor of Dr. Benjamin Rush, in the sum of five thousand dollars."

Cobbett in New York became only more embittered. He started another newspaper which he called the *Rushlight*, and continued his attacks on Rush more venomously than before. Threatened however with further legal action he found it expedient to return to England, where after various ups and downs, including two years in Newgate Prison on a charge of sedition, he eventually became a member of Parliament.

C. B. F.

THE ACADEMIC LECTURE

HOPE

KARL MENNINGER, M.D.²

INTRODUCTORY REMARKS

President Gerty's invitation to address this assembly of the future leaders of our Association was one of the great pleasures and honors of my life.

I can well remember my excitement when, in company with my father and my teacher Ernest Southard, I attended my first annual meeting—the 75th anniversary. This was 40 years ago, here in Philadelphia. I think I have missed only one meeting since then. In those days we were a small, intimate, informal group of a few hundred; everyone knew everyone. The program was simple, the entertainment lavish and the whole meeting a kind of family reunion. Southard and father and many others are gone now—but there are new elements of a family affair for my brother Will and myself of which we are proud.

In the years since then there has been a vast development in the numbers and complexity of our organization. I am glad to have had a part in the planning for its re-structuring, even though the immediate impact of the suggestions made by the Committee on Reorganization was a shock reaction. That 14 of our 16 recommendations have been put into effect is gratifying. But I find the greatest satisfaction in the emphasis which the program committees and officers have placed on our continued self-improvement, on psychiatric education, on, for example, academic lectures!

It is from a background of teaching that the topic which I propose to discuss emerged. I would like to warn you not to expect a scientific analysis of it along conventional lines. The subject does not permit of that; we don't yet know enough about it, and it would be presumptuous to make the attempt. I am not reporting a

research or a discovery, and it is no dark hour, calling for exhortation or comfort. I speak, rather, to the point of focussing attention upon a basic but elusive ingredient in our daily work—our teaching, our healing, our diagnosing. I speak of hope.

Long before love became medically respectable, long before Sigmund Freud demonstrated it to be a basic consideration in psychiatry, philosophers and poets and the common people of the world knew that it was essential to our mental health. Perhaps the most beautiful essay ever written was about love and its manifestations in personality.

To that essay is appended a footnote which is often quoted as if it were a summation. True, observed the writer, there are other permanent goods in the world beside love: there is faith, and there is hope. But, he added, "the greatest of these is love." With this concluding phrase most psychiatrists, I presume, would agree. Most of us, I think, would also agree to include faith—the faith that sustains our conviction that what we are doing is worth doing, the faith that our existence has meaning and the faith that our concern for one another reflects the concern of a Creator.

Our shelves hold many books now on the place of *faith* in science and psychiatry, and on the vicissitudes of man's efforts to *love* and to be loved. But when it comes to hope, our shelves are bare. The journals are silent. The Encyclopaedia Britannica devotes many columns to the topic of love, and many more to faith. But hope, poor little hope! She is not even listed.

I confess I was astonished to discover this. And yet, I realized that this avoidance of the theme reflected my own attitude. Time was when for this occasion I should have chosen as my subject "Love" or "Hate" or "Conflict" or "Instinct" or "Sub-

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

² The Menninger Foundation, Topeka, Kan.

limitation" or "Symptom Formation"—but never such a thing as "Hope." It seems almost to be a tabooed topic, a personal matter, scarcely appropriate for public discussion. And yet—since when has psychiatry eschewed examination of our innermost thoughts and feelings? Should we not adhere to our professional habit of self-examination and contemplation? If we dare to hope, should we not dare to look at ourselves hoping?

This is not the way I began to think about the topic. Nor did I come to it fresh from struggles with Kierkegaardian logic, or from brooding over Greek pessimism, or from apprehensiveness concerning the muddled management of unsettled world affairs. It was all in the day's work, so to speak, some preoccupations with the motivations of the young doctors I teach. The miracle of growth has long intrigued me: the growth of the child, the growth of plants, the growth of cultures and the growth of young psychiatrists. I have seen one after another young doctor step forward, fresh from his internship or from his military duty, to enter the mysteries of psychiatric training. I have seen these young men approach the abstruse and puzzling material of our field of medicine with resolute courage—let us say, rather, with hope.

But behind the façade presented by these acolytes there are often tumults of conflicting voices, fearful insecurity and bold over-self-confidence. The dramatic picture of psychiatry fascinates them, the reputed resistance to treatment challenges them, the multiplicity of method appalls them. They are assigned to wards filled with vacant or frantic faces, turned now upon "the new doctor." It is usually long after their initiation into the uncanny world of mental illness that they can distinguish the moving process, or would have the personal experience of interaction with a recovering patient.

Nevertheless, the novitiates assail their tasks headlong, sometimes with a *furor therapeuticus*. There is nothing mercenary or aggressive about this. They are not working for money. They are struggling to become effective in a new kind of relationship with patients. Sometimes they go too

far, they presume, they expect or promise too much. More often frustration, sad experience, or self-depreciation erodes the confidence required for persistent effort and the little candle of hope, which to awhile burned so brightly, weakens, sputters and goes out. We see the beginning of a repetition of scenes so common 25 years ago—hopeless physicians presiding, passively, over hopeless patients. "Psychiatry," we will hear, "has been oversold. The enthusiasm of inexperience only awaits the disillusionment of time. It is enough if we bestow kindness and wait for the inevitable. Hope is for the hopeless, and for fools."

We would like to think that the young men who pass through our training programs mostly emerge with certain limits put upon their expectations and certain guards upon their implied promises, but with the flame of their hope unextinguished and unextinguishable. We like them to believe that there is no patient for whom something helpful cannot be done. But we also like them to realize that the changes the patient desires in himself, or the physician desires in his patient, may not be the ones which come about, may not even be, in the long run, the changes that it were best to have sought for. It is a responsibility of the teacher to the student, just as it is of the young doctor to his patient, to inspire the right amount of hope—some, but not too much. Excess of hope is presumption and leads to disaster. Deficiency of hope is despair and leads to decay. Our delicate and precious duty as teachers is to properly tend this flame.

I propose, therefore, that we examine this essential constituent of both treatment and teaching. How shall we think of it? Is it something which *deserves* our concern as scientists? Or only as philosophers and poets? Is it only an epiphenomenon of life and the healing art? Do we, perhaps, tacitly ascribe hope to temperament, a sort of fringe benefit deriving from certain fortuitous congenital arrangements of glands and neurons? This is slight improvement upon the humoral theories of sanguinity and melancholy treasured by our forebears. If we ascribe hope, as some psychoanalytic writers have done, to recollections of maternal infallibility and recurrent oral grati-

nections, what combination of these experiences shall we regard as optimum? Others have seen in hope a prevailing note of fear, a counter-phobic denial of the horror and despair born of self-destructive trends or of the immanence of existential doom.

More congenial to my thinking is the ascription of hope to the mysterious workings of the repetition compulsion, the very essence of which is a kind of relentless and indefatigable pursuit of resolution and freedom. I would see in hope another aspect of the life instinct, the creative drive which wars against dissolution and destructiveness. But some will say, with Freud, that this is only our speculative abstractions to supply a model for practical thinking and behavior. Our mythology, he called it.

Here we might pause a moment to consider another mythology about hope. Pandora, it will be recalled, was an agent in the infliction of revenge of mankind by an angry Zeus. Curiosity led to her opening the box from which all the evils now in the world emerged. Biting, stinging creatures flew through the air and attacked mortals, but remaining behind was one good little sprite, man's consolation, Hope. But if Hope was a blessing, why did she remain in the box? And if, on the other hand, she was an evil like the rest, perhaps even the worst evil of all, why did she not fly out with them and begin work?

The Greeks mostly did consider hope an evil. The Greek philosophers and the later Greek literature tended more and more to the view that since fate was unchangeable, hope was an illusion, "the food of exiles" (Aeschylus) and, indeed, "man's curse!" (Euripides). Quotations from Solon, Simonides, Pindar, Thucydides and others say this in different ways. The Greek feeling about hope is vividly expressed in Anouilh's adaptation of Sophocles' *Antigone*, where, referring to herself, the heroine cries, "We are of the tribe that asks questions, and we ask them to the bitter end—until no tiniest chance of hope remains to be strangled by our hands. We are of the tribe that hates your filthy hope, your docile, female hope; hope, your whore. . . ."³

From this one can see that it was intrepid

indeed of St. Paul, writing to Greek friends, to declare that hope should stand alone, with love. In this Paul was loyal to his Hebrew heritage (Psalms 42, Isaiah 40) as well as his Christian convictions. For while the Jews were, to be sure, people of faith, they were also at all times a people of hope who, despite tribulation, clung to the expectation that the Messiah would come and the world get better. Hence, with the spread of Christianity and the dispersion of the Jews, hope had its missionaries, and Paul was one of them.

Martin Luther, like St. Paul, shook his fist at Greek fatalism and declared: "I very thing that is done in the world is done by hope." Samuel Johnson opined that "where there is no hope there can be no endeavor," and our own countryman, Emerson, took up the cudgels for hope: "it is by his hope," he said, "that we judge of a man's wisdom." "You cannot put a great hope into a small soul," said another. Jones' and Tennyson's words, "The mighty hopes that make us men," now echo in our ears.

But many poets have tended to accept (rather bitterly) the fatalistic if not cynical view of the Greeks:

Hope—fortune's cheating lottery, where for one prize a hundred blanks there be. (Cowley, 1647)

Worse than despair, worse than the bitterness of death, is hope. (Shelley: *The Genci*, 1819)

Hope is the worst of evils, for it prolongs the torment of man. (Nietzsche: *Human All-too-Human*, 1878)

I have had some patients who agreed with these poets. Partly that is why they were patients. But when I searched the literature for some kind words about hope, I experienced some uneasiness lest I find that very little (that my colleagues would accept) had ever been said for hope! And very little I found, indeed. But the cupboard proved not to be entirely bare. Particularly Dr. Thomas French, in his 5 volume examination of the psychoanalytic process, has dealt extensively with hope as the activating force of the ego's integrative function.

³ Which Creon interrupts with "Shut up! If you could see how ugly you are, shrieking those words!"

Anouilh, Jean: *Antigone and Eurydice: Two Plays*. London: Methuen, 1951.

Twenty years ago Mrs. Menninger and I submitted the thesis in *Love Against Hate* that hope was the dim awareness of unconscious wishes which, like dreams, tend to come true. We said,

There is no such thing as "idle hope." The thoughts and hopes and wishes that we entertain are already correlated to the plan of action which would bring these about, even though the whole project is ultimately renounced as too difficult or too dangerous. . . . This essential identity of hoping, wishing, purposing, intending, attempting, and doing is a little difficult for the practical common-sense man to grasp, because for him it makes a great difference whether a thing is executed or only planned or only hoped for. There is an external difference, to be sure; and there is an internal difference, too. But internally, (psychologically) from the standpoint of *motive*, there is no difference. There is a difference in the *fate* of the impulse, the degree with which it is correlated with reality, inhibited by internal fears, supported by other motives, *etc.*—but the motive force is the same. . . . The hopes we develop are therefore a measure of our maturity.

At that time it seemed to me that education best expressed the hope of the human race. But today I think I see the expression of hope in many clinical phenomena, as well.

Each of us here who has been in practice more than a decade has seen the "hopeless case" recover. And we have sometimes seen, or so it seemed, that a mother's or father's indomitable hope was a factor in this recovery. True, we have also seen hope deferred making the heart sick. But hope must be distinguished from expectation. "We are saved by hope," wrote St. Paul to some Roman Christians, "but hope that is seen is not hope: for what a man seeth, why doth he yet hope for?"

Nor is hope identical with optimism; optimism always implies some distance from reality, as Marcel points out, so that obstacles appear attenuated. The optimist, like the pessimist, emphasizes the importance of "I." But hope is humble, it is modest, it is self-less. Unconcerned with the ambiguity of past experience, hope implies process; it is an adventure, a going forward, a confident search.

When Doctors Bartemeier, Romano, Kibbie and Whitehorn and I went to the European Theatre of World War II for my brother Will and the surgeon-general, we arrived at the Buchenwald prison camp a few days after it had been entered by our armed forces. What I remember most vividly of that terrible place was something we didn't actually see. But we heard it at first hand. The night before we got there, our U. S. Army doctors had given what they called a "smoker" for the physician prisoners they had discovered and released. It was a kind of unearthly medical society meeting. Army rations were put out as refreshment, with some wine and tobacco, incredibly relished by the emaciated but overjoyed guests. Communication in words was imperfect because of language difficulties, but the spirit was unmistakable. The members of a fraternity were reunited. And in the spirit of the fraternity, experiences were exchanged.

These doctors, prisoners along with all the others, had followed the same routines of 4:00 a.m. rising, shivering roll calls, day-long drudgery on the Autobahn, shivering roll calls again, and finally a cold bowl of thin soup. They were starved and beaten and overworked like all the others, with no reason to expect any other fate than the miserable death and cremation which they observed about them daily.

But now comes the surprise. At night, when the other prisoners were asleep, these thin, hungry, weary doctors got up and huddled together in a group, and talked. They discussed cases. They organized a medical society. They prepared and presented papers. They made plans for improving health conditions. Then they began to smuggle in materials to make various medical instruments. And finally they built, of all things, an X-ray machine! The pieces had to be found somewhere; they had to be stolen, they had to be concealed in the prisoners' clothes; they had to be carried back to the prison on the long, weary marches after work. The guards had to be bribed or otherwise thrown off the scent. But little by little, with the aid of some engineers and electricians among the prisoners, these doctors put together a workable X-ray machine and used it, secretly.

at night, in their efforts to ameliorate the lot of their fellow prisoners. This was what dedication to medicine and humanity could do—**kept alive by hope.**

But, someone who remembered may ask, bitterly—what of the thousands who died miserably for *all* the hopes they nurtured? Even here I would not concede that hope had altogether failed. I would believe that hope had sustained them in their martyrdom, and that their hopefulness, however frail and tortured and ultimately defeated, was communicated on down through prison generations to those who were ultimately freed and brought us the record of this medical miracle. Who can read the eloquent last messages of the condemned as collected by Gottwitzer, Kuhn and Schneider and published as *Dying We Live*, and fail to catch a spark of hope from them?

Confirmation for the sustaining function of hope in life has recently come from a most unexpected quarter—the psychobiological laboratory. At the annual convention of the American Psychological Association in September 1956, Curt Richter of Johns Hopkins reported an astonishing phenomenon. It was simply this, that when placed in certain situations which seemed to permit of no chance for escape, even vigorous animals gave up their efforts and rapidly succumbed to death. This was observed experimentally in both laboratory rats and wild rats. "After elimination of the hopelessness feature," reported Richter, "the rats do not die . . . (Indeed, the speed of their recovery is remarkable). A rat that would quite certainly have died in another minute or two, becomes normally active and aggressive," swimming vigorously for 50 to 60 hours. Richter emphasized that not the restraint alone, nor the immersion, nor the exposure, nor the trimming of whiskers will explain the phenomenon. It is, he insisted, the loss of hope.

Richter added some confirmatory data from other fields and suggested an extrapolation from his laboratory observations to explain the occurrence of sudden death in rabbits, chimpanzees, foxes, raccoons, some birds, musk oxen, otters, mink and even human beings. "Some of these instances," he said, "can best be described in terms

of hopelessness, all avenues of escape appearing to be closed."⁴

This is not an isolated observation or hypothesis. For example, from a large amount of psychosomatic investigation Engel and his associates in Rochester, New York, consider that what they describe as "helplessness" and "hopelessness" reflect a necessary if not a sufficient condition for the development of organic disease.⁵

And then there is the Queequeg phenomena of "Voodoo Death" in Moby Dick which Walter Cannon and others have amply substantiated with authentic data from primitive societies. No doubt most of us can recall instances in which the loss of hope seemed to accelerate the arrival of death for a patient. There are many such stories, unconfirmed of course but highly suggestive, in the daily press.⁶

All of these things seem to me to support the theoretical proposal that hope reflects the working of the life instinct in

⁴ Richter, C. P.: Sudden Death Phenomenon in Animals and Humans. Unpublished Manuscript

⁵ Schmale, A. H., Jr.: Relationship of Separation and Depression to Disease (1) A Report on a Hospitalized Population Psychosomatic Medicine, July-Aug. 1958. pp. 259-277.

⁶ For example "Blasts End Mother's Will to Live," Tucson, Arizona.

Twelve days ago, Mrs. Helen F. Hopke lay in her bed fighting to stay alive to see her daughter's wedding.

Incurably ill for the past five years, Mrs. Hopke had been indirectly responsible for the meeting about a year ago of her daughter, Rose Marie, 20, and the girl's intended husband, Arthur Woodrow Hudson, 26.

Rose Marie had acted as nurse and housekeeper to her bedfast mother. While buying medicine she met Hudson, a pharmacist in a local drug store. Friends said it was the girl's first romance.

They also said all that kept Mrs. Hopke alive in recent months was the thought of the impending marriage.

The 56-year-old mother heard the couple enter the house laughing and talking about the April 4th wedding. She heard them enter the next room.

Their chatter ended in three blasts from a shotgun. Police said Hopke, opposed to the marriage, wanted his daughter to continue to care for her mother. He became enraged at reading the wedding notice in the paper, shot the couple then turned the gun on himself.

Rose Marie was taken to one hospital where she is recovering. Her mother was taken to another.

Tuesday night, Mrs. Hopke died.

(Topeka Daily Capital,
Thursday, April 2, 1959)

its constant battle against the various forces that add up to self-destruction. It would be too narrow to regard it as a form of refined narcissism since, as Marcel points out, there is something essentially unnarcissistic and beyond self in hope. One sees this in the hopefulness, not of the patient but of the physician. How much our patients do for us doctors!

We in Kansas have lived through the experience of a state hospital revival. Although we have built almost no new buildings, and although our admissions have increased tenfold in 15 years, our once overcrowded patient population has steadily diminished until we now always have available empty beds. We have even closed some wards as unneeded. We are proud of this, and proud that the voters and officials of our state appreciate it, and consider the cost per *stay* more significant than the commonly used cost per day. A distinguished governor visited us for several days, determined, as he said, to "discover the secret." "Our state has more men and more money than Kansas," he said. "Why can't we do these things?"

He didn't discover the secret partly because he didn't believe what we told him. Many of my colleagues in this audience may not believe it now, either. But we consider the crucial element in the Kansas state hospital program to have been the inculcation of hope. Not in the patients directly, but in the doctors and all those who help them, in the relatives of the patients, in the responsible officials, in the whole community, and *then* in the patients. It was not just optimism; it was not faith; it was not expectation. We had no *reason* to expect what happened, and what still happens, and our faith was only that which all scientists share. But we did have hope.

We had more than hope, you will say; we had had experiences which encouraged hope. But these experiences were themselves based partly on hope, confirming the assumption that hope fires hope. This is not a conscious process, or at least not entirely so. I have wondered if we might perhaps understand the placebo effect in this way, a transmitted hope or reinoculation, as it were? In control research studies of the new drugs, for example, patients who

receive only placebos sometimes show much improvement. In one study that I know about, testing an excellent drug, more patients in the group which had only placebos were able to be discharged from the hospital than from the group of those who got the actual remedy (although a larger number of the latter showed marked improvement).

Another phenomenon that is perhaps related to hope is the sudden improvement and even recovery of patients who have been for a long time fixed, as it were, at low levels of organization and regression. A new doctor arrives, or a new aide, and the patient promptly and most unexpectedly begins to recover.⁷

Whatever the explanation offered for such phenomena, to invoke suggestion or coincidence (whatever *they* are) will not suffice. There is more to it. And yet we doctors are so schooled against permitting ourselves to believe the intangible or impalpable or indefinite that we tend to discount the element of hope, its reviving effect as well as its survival function. Because of the vulnerability of every doctor to the temptation of playing God and taking the credit for the workings of the *vis medicatrix naturae*, we are necessarily extremely cautious in attributing change to any particular thing and least of all to our own wishful thinking.

There are many sufferers in the world, and there are many who seek to afford them relief. Among the latter there are those who use intuition and magic, and there are those who attempt to derive basic principles checked by experiment and observation, which we call the scientific method. For the former group, healing is more important than truth; for the latter, truth is more important than healing. Indeed, the search for truth, the desire to heal, and the earning of one's living are three persistently conflicting forces in medical practice.

⁷ But it is also true that just the opposite occurs: A patient on whom intensive efforts have been made fails to respond and is given up in despair, dismissed by her physician or removed to a custodial hospital. We have all frequently seen this result in a prompt improvement and even recovery. Perhaps we could regard this as an awakening of dormant hope by a desperate and unintentional shock-type method.

In the daily performance of healing acts, the scales are weighted heavily against scientific truth. Patients long to be deceived. Driven by pain and desperate with fear, they are ready to seize at "straws of hope." They prostrate themselves before the doctor; they queue up in weary, straggling lines awaiting the opportunity to submit themselves to humiliations and new sufferings, or even to hear a few words of reassurance. Beseiged by such multitudes of petitioners, often with gifts in their hands, the doctor, knowing his limitations, must try to be patient, kind and merciful—but simultaneously "objective" and honest. The desire to bring comfort, the need to earn one's living, the suppressed longing for prestige and popularity, the honest conviction of the efficacy of a pill or a program, sympathy for the pleading sufferer—all of these throw themselves upon the scales in the moment of decision. Every physician in the world has heard the devil whispering, "Command that these stones become bread . . . All these things I will give thee if thou wilt fall down and . . ." And sometimes he falls down. He exploits the patient's hope.

Against such dangers there have been for 25 centuries an oath of loyalty, a tradition of humility, and certain maxims of practice. One of the latter is the putting of diagnosis before treatment, empiricism before hope. Even in pre-scientific days it was indefensible for a doctor not to indicate some comprehension of what one claiming to be a healer was dealing with. For the patient, even a diagnosis offered *some* hope, since it showed that his condition was not unique. But for the doctor, who was better acquainted with the implications of a diagnosis for which he had no real treatment, the temptation was ever present to neglect diagnosis in the interests of hope, or at least in the interests of treatment.

It should be remembered that there were once many different kinds of competing healers. There were the apothecaries who in 1617 were granted a charter permitting them to sever their 200 year association with the grocers. There were the various trade guilds: the barber-surgeons, midwives and bone setters; and then there

were the physicians, with their plasters and clusters. All were busy "treating."

Out of this confusion, under the leadership of a gallery of immortals on pillars erected here and there over a wide area, there slowly arose the magnificent edifice of modern, scientific medicine. The elimination of superstition and magic took a century, but the purge strengthened medical science mightily. Thousands of remedies were tested, found wanting and discarded. Many improvements in diagnostic techniques and instruments were introduced. Treatment, except for the most superficial palliation, was apt to be regarded with great suspicion, while the memory of recent quackery, pretention and deceit was fresh.

In psychiatry, the efforts of our predecessors to bring order out of the apparent chaos of the phenomena of madness were reflected in assiduous efforts to describe disease entities, to name them, to identify them, to graph them, and to seek for "etiologies." This was the traditional concept of diagnosis and it offered little to justify hope. The broken or misshapen personalities coming under medical observation were described or christened with tens of thousands of names and groupings, painstakingly put together by assiduous workers, only to be discarded by those of a later generation. These old labels, like epitaphs on tombstones, may be read with sober reflections that life is short and the art long, that our grasp of human phenomena is limited and narrow, and that our concepts are ever changing and unclear.

Once diagnosis in the sense of recognizing, naming, classifying and distinguishing between different forms of behavior disorder seemed of fundamental importance. The best psychiatrist in my early days was one who could most convincingly distinguish between some of the many varieties of "paranoia" or "dementia praecox"⁸ or "psychopathic personality." Some of my colleagues "discovered" new varieties of these; I even thought that I did.

Today it seems to me most important that we *not* do that. Our impressive labels only

⁸ A term introduced 99 years ago by B. A. Morel in 1860 describing the mental condition of a boy of 14 years.

reify and freeze a phase of a process ; they misrepresent our modern concepts and they strike a blow at hope, and hence at treatment. Words like *non compos mentis* or "responsible" and "irresponsible" really indicate only whether or not we think an accused person is able to appreciate being executed. "Psychotic" and "neurotic" cannot be competently defined, since what they mean at any one moment depends upon who is using them to describe whom. Many of us have urged their abolition, but they persist as weapons in scientific name-calling. Some colleagues incline to label "psychopathic personality" all patients who admit having broken the law. And surely it is more than a little disturbing to us all to contemplate the results of the recent researches by colleagues Hollingshead and Redlich exposing the fact that what one gets called by psychiatrists depends to a degree upon what class of society one comes from.

But over and above the matter of social and political and medical misuse of terms, these diagnostic designations belie the progress we have made in understanding the nature of illness. A name is not a diagnosis. It does not determine treatment. Its original purpose, perhaps, was to distinguish between wise and foolish expectations, but its net effect has come to be that of destroying hope.

Today there is a trend away from names, states and entities and toward dynamics, relativity and process. Just as the nature of matter has assumed a new aspect, so the nature of disease has come to be understood differently. The only entities in disease, said Allbutt long ago, are the individual patients, Smith and Jones, in certain phases of their being. "Diseases are not specifics such as cats and mushrooms ; they are 'abnormal' behaviors of animals and plants." Today we are following Allbutt.

It is the privilege of some of us to be called doctors. And if the peculiar phases of existence which Jones and Smith are experiencing lead them to approach us in the belief that we can help them, they can then be called patients and their afflictions may be called disease. But we cannot discharge our responsibility by "calling." We may not exorcise Smith's afflictions by

giving them a name. That is not the basis of our hope, and if it is the basis of Smith's hope, it is one we should not exploit.

It is our responsibility as physicians to instigate some change in the relations of Smith to his environment—directly if possible, indirectly and gradually most likely. To do this we must attempt to understand the man, how he has become what he is, what goes on inside of him, what goes on around him and how these interact. By observing the internal and external processes we can discover what in his world is good for Smith and what is unbearable, what damage he inflicts upon himself and others, and what potentials within him remain underdeveloped. And here enters in hope, for we acquire, thus, a rationale for therapeutic intervention.

This is what we now call diagnosis. It were better to call it diagnosing, to indicate its transitive, continuing nature, its look toward the future rather than toward something static or past. Diagnosing is the first step in a cooperative relation between patient, physician and environment working toward the betterment of a situation, especially as it affects our patient. This is based upon hope, hope implicit in our effort and hope nurtured in our patient.

The practice of medicine today is vastly different from that of a hundred years ago when Samuel Gross wrote (1861) :

It requires no prophetic eye, no special foresight, to discover that we are on the very verge of one of the most fearful and widespread revolutions in medicine that the world has ever witnessed.⁹

That revolution came about (Dr. Earl Bond reviewed it this morning) but not so soon as Gross expected. Yet it is hard to believe today that there was ever a time when a doctor had to defend himself to his colleagues if he claimed to have cured someone. In those days hope was faint and precious. Today it seems sometimes almost as if hope was considered unnecessary.

The revolution that elevated our medical profession from a discouraged, submerged

⁹ Gross, Samuel : Quoted by Leikind, Morris C. : *The Evolution of Medical Research in the United States. In History of American Medicine.* (ed. Felix Marti-Ibanez) N. Y. : MD Publications, 1958. p. 126.

state to a progressive and confident one was partly the result of new discoveries, and partly from the recognition of psychology as one of the basic medical sciences, along with physics and chemistry. This came about from the experiences of World War I, and from the discoveries of Sigmund Freud. The latter were introduced into American psychiatry about 1920, the way prepared for them by J. J. Putnam, Ernest Southard, Adolf Meyer, William A. White, A. A. Brill and Smith Ely Jelliffe.

I cannot describe all of these old friends here, but I must say a word about Southard, because he was my teacher and because above all men I have known, and entirely out of keeping with the spirit of his day, he placed great hope in psychiatry. He said here, long ago, in 1919, *remember* :

May we not rejoice that we (psychiatrists) . . . are to be equipped by training and experience better, perhaps, than any other men to see through the apparent terrors of anarchism, of violence, of destructiveness, or paranoia—whether these tendencies are showing in capitalists or in labor leaders, in universities or in tenements, in Congress or under deserted culverts. . . . Psychiatrists must carry their analytic powers, their ingrained optimism and their tried strength of purpose not merely into the narrow circle of frank disease, but, like Seguin of old, into education; like William James, into the sphere of morals; like Isaac Ray, into jurisprudence; and above all, into economics and industry. I salute the coming years as high years for psychiatrists!

These "high years" really began after Southard died. The public had been alerted by the literary dissemination of the discoveries of Freud and also by the growing "mental hygiene movement." Most doctors had had almost no psychiatry in their medical school training. Twenty-five years after Southard had spoken those prophetic words—and died—we were in the midst of another World War. There was a shortage of psychiatrists. To enlist interest and recruit doctors, I visited medical schools over the country and talked at length to students, deans and faculty members. I found that a common objection to entering psychiatry was an impression that our patients "never get well." It is such a hopeless field,

they said. Penicillin and the other miracle drugs are more definite and exciting than the dreary wards of state hospitals, filled with silent, staring faces.

We can see, now, that these students had been shown the wrong side of psychiatry, its failures rather than its successes. But one thing struck me then which has remained in my mind indelibly. I perceived vividly how hopelessness breeds hopelessness, how the non-expectant, hope-lacking or "unimaginative" teacher can bequeath to his student a sense of impotence and futility, utterly out of keeping with facts known to both of them! Surely even these misled students knew that *some* psychiatric patients recover, even if they didn't know that the vast majority does so. But like their teachers, they adopted some of the very symptoms of their patients: hopelessness and goal-lessness! Physicians in state hospitals at that time did not expect their patients to recover, and were a little surprised when recovery occurred. Some superintendents quite unabashedly announced (published) recovery rates of 5% per year!

This experience only reinforced my conviction that hope, that neglected member of the great triad, was an indispensable factor in psychiatric treatment and psychiatric education.

At the end of the war, veterans requiring continued psychiatric treatment began returning to this country in large numbers, and at the same time the physicians who had seen these phenomena of stress and overstress develop and recede were demobilizing. Many of these doctors now sought to learn more about this psychiatry which seemed so important in understanding these cases. During the first few months of its existence, the Menninger School of Psychiatry received over 600 applications. Other training centers were similarly flooded.

Some of them no doubt came into psychiatry because of an awareness of their own threatened disorganization and the dim realization that this human-all-too-human tendency was one against which penicillin and heart surgery and all the discoveries of modern medicine offered no protection. By Freud discoveries of quite

another sort had been made and knowledge of them had slowly become common property. These discoveries promised no miracles, no instantaneous cures; they did not seem to justify hope. In fact, Freud was frequently accused of a devastating pessimism. Surely hope has rarely entered medical science through so narrow and tortuous a crevice. But it did enter and its rays transformed the face of modern psychiatry in our lifetime. A whole new viewpoint in medicine developed, one that gave authority and technique to efforts at systematic self-scrutiny, a kind of extended and continuous diagnostic case study.

In a way it seems curious that the psychoanalytic process, which is so obviously diagnostic, has generally come to be called treatment. Diagnosis is the hopeful search for a way out; but the setting forth on the way which one discovers and the unflinching persistence in making the effort—that is the treatment; that is the self-directed, self-administered change.

The psychoanalytic treatment method is a great discovery but this is not what changed psychiatry. It was the new understanding that psychoanalytic research gave us concerning men's motives and inner resources, the intensity of partially buried conflicts, the unknown and unplumbed depths and heights of our nature, the formidable power each of us holds to determine whether he lives or dies. It was the realization that we must encourage each individual to see himself not as a mere spectator of cosmic events but as a prime mover; to regard himself not as a passive incident in the infinite universe but as one important unit possessing the power to influence great decisions by making small ones.

It was not the treatment technique of psychoanalysis that changed psychiatry; it was the new understanding of men's motives and inner resources, of the intensity of partially buried conflicts, the unknown and unplumbed depths and heights of our nature, the formidable power each of us holds to determine whether he lives or dies. Wrote William James:

Will you or won't you have it so? is the most probing question we are ever asked." We are

asked it every hour of the day, and about the largest as well as the smallest, the most theoretical as well as the most practical things. We answer by *consents* or *non-consents* and not by words. What wonder that these dumb responses should seem our deepest organs of communication with the nature of things! What wonder if the effort demanded by them be the measure of our worth as men!

"Ye shall know the truth and the truth shall make you free," said another wise One. For this emancipating truth Freud searched not in physics or chemistry or biology, but in the tabooed land of the emotions. From the Pandora chest of man's mind, full of harmful and unlovely things to be released upon a protesting world, there turned up—last of all—Hope.

Selfishness, vengefulness, hate, greed, pettiness, bitterness, vindictiveness, ruthlessness, cruelty, destructiveness and even self-destructiveness—all these are in us. But not only those. Invisible at first, but slowly pervasive and neutralizing came love, and then—perhaps because of it—came faith, and then hope.

Love, faith, hope—in that order. The Greeks were wrong. Of *course* hope is real, and of course it is not evil. It is the enemy of evil, and an ally of love, which is goodness.

Freud's great courage led him to look honestly at the evil in man's nature. But he persisted in his researches to the bottom of the chest, and he discerned that potentially love is stronger than hate, that for all its core of malignancy, the nature of men can be transformed with the nurture and dispersion of love.

This was the hope that Freud's discoveries gave us. This was the spirit of the new psychiatry. It enabled us to replace therapeutic nihilism with constructive effort, to replace unsound expectations—first with hope, and then with sound expectations.

This is what it did for us, for psychiatrists. And for our patients—miserable, apprehensive, discouraged and often desperate—what can we do better than that? What can we do better than to dispel their false expectations—good and bad—and then light for them a candle of hope to show them possibilities that may become sound expectations?

And we who are teachers—can we do better by our eager, young seekers for the keys to wisdom than to help them sharpen the accuracy of their expectations without extinguishing the divine fire?

But there are many people in the world who are neither our patients nor our students, and who are nonetheless filled with great apprehensiveness, partly from ignorance and mistrust of one another. They are afflicted with great suffering which all our discoveries have not ameliorated, and awed by vast discoveries which none of us fully comprehend. Some of them look to us for

counsel, to us whom they have so highly honored and so generously rewarded with prerogatives and opportunities. They are our friends, our brothers and sisters, our neighbors, our cousins in foreign lands. For these people—for them and for ourselves—are we not now duty bound to speak up as scientists, not about a new rocket or a new fuel or a new bomb or a new gas, but about this ancient but rediscovered truth, the validity of Hope in human development,—Hope, alongside of its immortal sisters, Faith and Love.

LETTER FROM AUSTRALIA

PSYCHIATRY IN THE STATE OF VICTORIA, AUSTRALIA

Victoria, geographically, is the second smallest of the 6 Australian states; but on the other hand its population is the second highest. Although the following short account is a description of psychiatry in Victoria, it could be taken as fairly typical of psychiatry throughout Australia. There is naturally some variation between the different states, but generally speaking all appear to conform to a somewhat similar pattern.

HISTORICAL

From the year 1836 when the Colony of Victoria was founded, until 1848 at which time the first asylum was erected, lunatics were confined and cared for in the various gaols. It was not until about 1872, by which time there were 4 asylums in the Colony, that lunatic patients were finally cleared from the gaols, and all new patients were admitted directly to one or other of the asylums.

The first private asylum was established in 1868, and 5 years later the institution for the inebriates under the provision of the Inebriates Act was set up. Possibly this latter institution was the first of its kind in the world where inebriates were compelled by law to enter for treatment. The year 1887 saw the opening of a special institution for idiot and imbecile children, and the same year the criminal lunatic asylum was established.

During the first quarter of the century, two important advances were made. In 1912 there was opened a Receiving House, for admission and early treatment of certified cases, and in 1920 the Voluntary Boarder Act allowed the admission to state institutions of voluntary cases for the first time.

Evolution from custodial asylums to therapeutic mental hospitals during the first half of the century was indeed very slow and it was not until 1951, when the Mental Hygiene Authority took over the control of the state Mental Hygiene Department, replacing a one-man directorship, that any

great strides in raising the overall standard of mental hospital psychiatry were possible.

The first psychiatric outpatient clinic attached to a general hospital began to function in 1927 and several years later all 4 teaching hospitals had followed suit. By the end of the thirties the state Mental Hygiene Department had opened 4 full-time child guidance clinics.

PRESENT SITUATION OF STATE SERVICES

Today the state provides mental hygiene services for a population approaching 3 million people, and in many respects somewhat resembles the system as I saw it in the province of Ontario. This service is controlled by the Mental Hygiene Authority consisting of a Chairman and Deputy Chairman (both psychiatrists) and an Administrative lay member.

The Department consists of 3 psychiatric hospitals (early treatment), 9 mental hospitals, 4 institutions with residential schools for retarded children, 5 full-time children's clinics, 9 adult clinics conducted on a sessional basis, 3 hostels for ex-patients, 3 day hospitals and a research centre. In addition, the state subsidises some 24 special day care centres for the medium grade intellectually retarded children.

During the year 1958, new admissions to state institutions amounted to 5,878 and the average number in residence was 8,697. The total number of new outpatients seen for the year was 2,845. Treatment received in all hospitals, clinics and outpatient centres is free, and costs are met by the state.

Broadly speaking, the old hospitals are similar in design to those of the same vintage seen in parts of Canada and Great Britain. For the most part, however, these older institutions have been extensively remodelled and modernised. Together with the more modern hospitals they would appear to be superior in design and comfort to many of the mental hospitals in those two countries. Hospitals in Ontario, on the other hand, would seem to be more lavishly equipped.

During the past 8 years all hospitals here in Victoria have adopted the "open-door" policy, perhaps not to the same extent as in England but to a greater extent than was evidenced in Canada. A serious attempt is being made to carry out a full-scale program of resocialisation and rehabilitation for the long-term patient. In spite of considerable progress, we have as yet by no means reached standards anything like that existing in England, where administrative psychiatry is at a very high level.

In regard to physical treatment of psychiatric disorders, here in Australia we seem to have kept reasonably well abreast of changes and prevailing fashions in treatment overseas, but on the other hand our psychotherapeutic procedures are perhaps not as well developed as in Canada.

Psychiatric and mental deficiency nurses (male and female) receive a 3 years' training, and on qualification are registered as psychiatric and mental deficiency nurses respectively. The training program is based on the English nursing syllabus, emphasis being placed on the study of interpersonal relationships, patient management, resocialisation and rehabilitation. For senior posts and early treatment units, preference is given to those holding both psychiatric and general nursing certificates. An increasing number of general nurses are now doing a year's post-graduate study and training in psychiatry and thus qualifying in a double certificate.

The total number of medical personnel at present attached to the Department is 100, although there is an establishment for 120. Our biggest deficiency in the medical service is at the level of consultants, but it is expected that these vacancies will be gradually filled by recruitment overseas and by speeding up our own post-graduate training in psychiatry for junior officers.

In regard to ancillary staff, full use is made of psychologists, social workers, occupational therapists, and so on in clinics, but apart from a certain amount of research work, psychologists as yet are not employed in the mental hospital setting. Most hospitals have their own resident chaplains.

Victoria, as indeed most Australian states, in the past has lagged behind England and Canada in matters of research.

During recent years however research programs have been organised with the various institutions from our central Research Institute. Although still in its infancy already very useful work has been done and some very worth while contributions are now beginning to appear. This Institute has initiated an extensive program for dissemination of knowledge to both para-psychiatric organisations, public bodies, and the community.

Day hospitals here are still in the initial stages of development. Those already in existence are conducted as therapeutic centres for early treatment. In the very near future it is hoped that other centres will be operating more as day-care centres, for patients returned to the community hospital in a state of incomplete remission such as the schizophrenic and geriatric types. Day-care centres for mentally retarded children, referred to above, have been operating since 1951. These are of a high standard and receive very strong support from a large section of the community.

Over the past 20 years or so there has become a complete change in attitude of the community towards mental illness, and in fact many of the recent reforms in mental health have originated through pressure from the public. A very important organization in this field is the Mental Health Federation, which is the top-level body for all mental hospital auxiliaries and associated bodies interested in mental health. It was through the demands of the public that the Victorian Council for Mentally Retarded Children, now a very strong body, was organised with the original sole purpose of providing facilities for the care of non-institutionalised defective children.

In planning for the future, the Authority has decided that additional hospital beds are needed immediately to overcome overcrowding. In future early treatment hospitals will not exceed 100 beds and mental hospitals will be limited to a maximum of 500. During the next 10 years it is expected that 5 early treatment centres will be erected in decentralised areas to meet the local needs of these regions. Outpatient facilities are to be extended eventually to every main country general hospital and for the most

part will be staffed on a sessional basis by medical officers from the nearby psychiatric centres. A somatopathic clinic is to be opened within the next 3 months. At a later date this will be followed by the setting up of an emergency clinic and information bureau. Psychiatric services are already being provided for children's courts and penal establishments. The Department expects to take over psychiatric services in the Education and Children's Welfare Departments within the next 12 months.

REPATRIATION DEPARTMENT

Psychiatric care of the ex-serviceman is provided by the Commonwealth Repatriation Department for each state, in the way of inpatient and outpatient services. This service is on similar lines to the service for veterans in Canada.

PRIVATE PSYCHIATRIC PRACTICE

Whereas some 35 years ago there was only one private psychiatrist in the city of Melbourne, there are now no fewer than 25 engaged in private practice. The majority of private psychiatrists are attached part-time as consultants to the psychiatric units of one or other of the 6 university teaching hospitals. These units have gradually grown in strength and importance resulting in psychiatry now being accepted here as one of the major medical specialties. Although many of our psychiatrists are psychoanalytically orientated, those actively engaged in psychoanalysis still constitute a very small group.

The influence of office psychiatry was no doubt largely responsible for the acceptance of psychodynamic psychiatry in this country. To the young group of Melbourne private psychiatrists must go the credit for initiating the formation of the Australasian Association of Psychiatrists in 1946. This Association now has 180 members and 70 associate members. Full membership is restricted to those members of the profession holding an appropriate postgraduate degree or diploma, and who have been in full-time psychiatric practice for a minimum of 5 years. Annual meetings of the Association are held successively in one or other of the capital cities. Each of

the 6 states has its own branch which conducts its own affairs. The strength of the Victorian Branch at the present time is 49 members and 32 associates.

POST-GRADUATE EDUCATION

Medical postgraduates wishing to obtain the Melbourne D.P.M. are required to undergo a minimum of 2 years' training at approved mental hospitals and psychiatric units. The course given closely resembles that of the United Kingdom, the accent perhaps being at present on academic rather than on clinical training. While purely academic subjects such as psychology, psychopathology, neuroanatomy and neurophysiology, are undertaken by the respective university faculties, courses of lectures and demonstrations in psychiatry, neuropathology and neurophysiology are organised under the auspices of the permanent medical postgraduate committee and the Australasian Association of Psychiatrists. In actual practice teaching responsibilities are shared between both the private and departmental psychiatrists. The examination of D.P.M. is conducted in two parts: Part I consisting of neurology, neurophysiology and psychology 1, being taken at the end of the first year; Part II, psychiatry, neuropathology, neurology and psychopathology, at the end of the second year. The examinations have always been maintained at a very high standard as is shown by the number of successful candidates at each examination—approximately 1/3 of those sitting.

In order to raise the level of postgraduate training in Victoria, the Association of Psychiatrists is at this moment negotiating with the university authorities to have established a university department in psychiatry, and for the appointment of a professor. Incidentally, New South Wales is the only state in Australia at the present time which has such a department and a chair of psychiatry, although Queensland has had for a number of years a research professor.

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ANALYSIS OF POPULATION REDUCTION IN NEW YORK STATE MENTAL HOSPITALS DURING THE FIRST FOUR YEARS OF LARGE-SCALE THERAPY WITH PSYCHOTROPIC DRUGS¹

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INTRODUCTION AND BACKGROUND DATA

On June 30, 1955 the resident population of New York State's mental hospitals had reached an all time high of 95,000. The previous year had brought an increase of 2,400 (Fig. 1); this was the continuation of a long-term trend that had doubled the mental hospital cases since 1920. Many factors had changed during that time; the population of the state had increased, the proportion of aged had grown; mortality in the hospitals had been diminished, and mental hospitals were being used more, annual first admissions for all types of psychoses had risen from 72 per 100,000 in 1930 to 103 in 1955. These explained the situation in part at least but the fact remained that the sheer speed of growth represented a problem in itself and there was no indication of a slackening of pace. Overcrowding had reached an overall figure of 334(1) and the existing shortage of 23,000 beds seemed destined to be increased each year by another 2,000 or more cases. At that time there was little comfort in the fact that the highest point in first admissions had been reached in 1950 and had not risen further, or that significant advances had been taking place in psychiatric treatment.

In 1955-56 this upward trend was abruptly reversed and converted into a fall of 500 for the year (Fig. 1). In itself, this was a small change but it gained significance from several associated circumstances: 1. The speed and consistency of the previous rise. 2. The fact that similar decreases were reported quite widely from other mental hospitals, both in this country and abroad. 3. It was coincidental with the introduction of a new form of psychiatric therapy, that of the tranquilizing drugs. In New York State this method of treatment

was first used on a large scale in 1955 when 30,000 cases received drug treatment.

Analyzing the New York experience, the authors² came to the conclusion that the abrupt population fall was in material degree due to the introduction of the new drugs. The method used was to contrast the overall statistical and administrative data for the first year of large scale drug therapy with the data for the year immediately preceding. No other explanation for the statistical changes could be found and the distribution of the effect was such that it seemed to reflect the action of the drugs, being greatest in those types of cases where their advantage over previous methods was clinically highest and least marked or absent in other types, such as organic states.

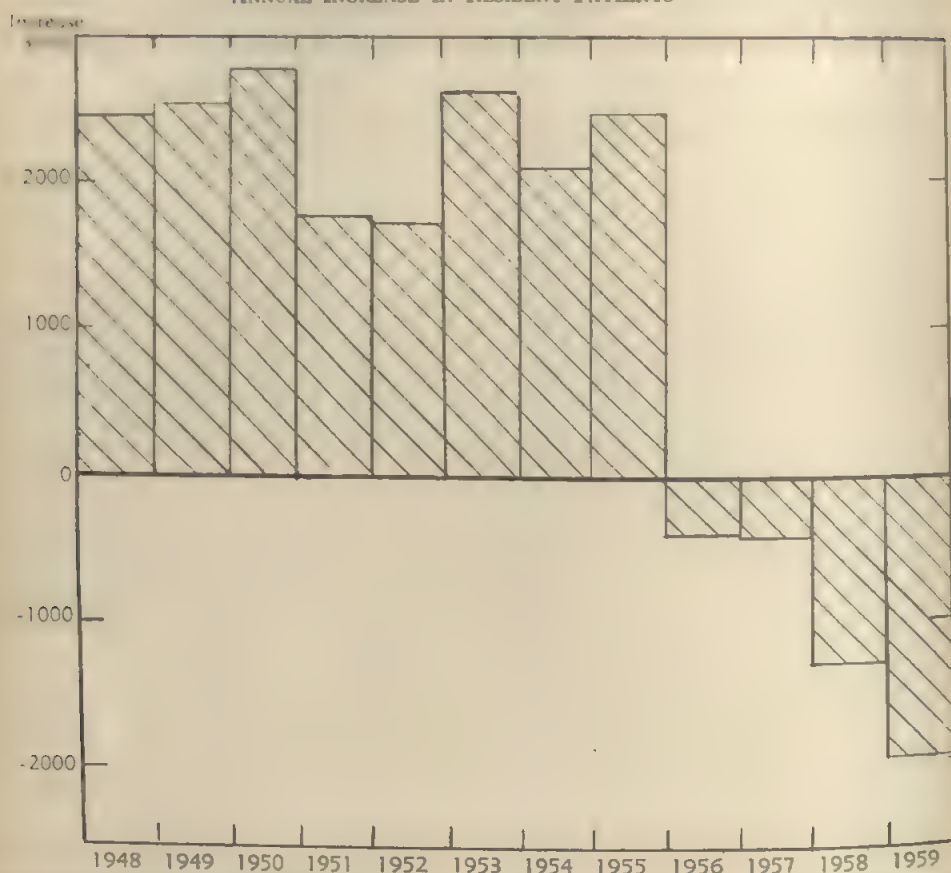
From the first, the favorable turn in mental hospital figures had attracted wide attention and had a more profound and immediate effect on general opinion with regard to hospital maintenance and construction than might be judged from printed reports. In some quarters the small changes were promptly projected with quick optimism and there were reports that in several parts of the world building programs were held up in expectation of some overwhelming change which would empty the hospitals. Forgotten was the argument that the mental hospital problem was created by the mental hospital and for that reason it could be solved only by building no more hospitals or abolishing those which did exist. A contradictory line of logic served to reach the same conclusion. The reasoning now was that due to drug therapy the problem was no longer with us and that the hospitals could be abandoned. Actually, we had had only a small and brief though promising experience. Many questions remain unanswered—some of them quite decisive—for example, "How stable and how extensive would the change prove to be?" The answer was of more than academic interest. If, as some

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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FIG. 1

ANNUAL INCREASE IN RESIDENT PATIENTS



claimed, this was the beginning of a far-reaching decrease, building programs might well be abandoned and the problem of mental hospital psychiatry could be considered solved except for the small amount of time required to complete the transition. On the other hand, many felt that the change was coincidental or that drug effects merely masked the symptoms of mental disorder for a time and produced a type of spurious superficial improvement which would soon be unmasked with a return to the hospital for individual cases and, in the aggregate, a reversion to the previous type of hospital statistics. According to this view, the use of tranquilizers was a regrettable but transitory fad.

Only time could resolve such questions; several years of additional experience have now accumulated. It is already quite ob-

vious that regardless of theoretical considerations drug therapy on a large scale is more than a transitory fad in mental hospital practice. It also is becoming clear that whatever the causes of the original shift in the hospital statistics they represent more than a brief cyclical reversal of an old trend; we are faced with a phenomenon that does not have any precedent and data bearing on this important topic are worth analysis and review since the interpretation of the changes which have taken place is still a matter of active controversy and important practical decisions of positive and negative nature hang on such interpretations.

METHOD AND ASSUMPTIONS

In New York the fall in population has continued for 4 consecutive years and sta-

istical data for the first 3 of these years are now available for study. It will be the purpose of this paper to analyze the overall figures to try to identify those classes and kinds of patients most, and those least, affected, and to trace some tendencies which seem to have implications for the future, seeking at least partial answers to some of the questions mentioned above. The method, similar to that outlined in our first report(2) will not be further described here except to say that it represents an analysis of the total work of the institutions during one period compared with the total results at another. The assumption is that such total comparisons may reveal the operation of factors which might be less certainly recognized when smaller numbers are used. Particularly a measure of the change in the total therapeutic potential of the mental hospital system is being sought. Such a comparison is facilitated when the two periods are closely spaced so that as few conditions may change as possible. As time goes on, there is more opportunity for other known and unknown factors to be introduced; to a certain extent this has already taken place in our series, and this will be described below.

The measure of therapeutic potential has been the capacity to return patients to society. It is recognized that return to the community does not represent an end in itself and can be easily subject to changes of administrative policy. We can only say that such policy changes have not taken place. Moreover, anyone who has attempted to change the operating conditions of a large organization knows the inherent difficulties and will recognize that sweeping administrative changes are virtually impossible to achieve quickly, but require a period of years. The fact is that no effort was made to produce any administrative changes during the first year of large-scale drug therapy; during the last 3, a very active program of change and liberalization has been under way. We can now go on to examine the specific statistical changes comparing 3 successive periods:

1. The year 1954-55 when no drug therapy was in use.

2. The year 1955-56 when large-scale drug therapy was introduced.

3. The years 1956-58 when a number of other favorable factors were added.

VOLUME OF DRUG THERAPY

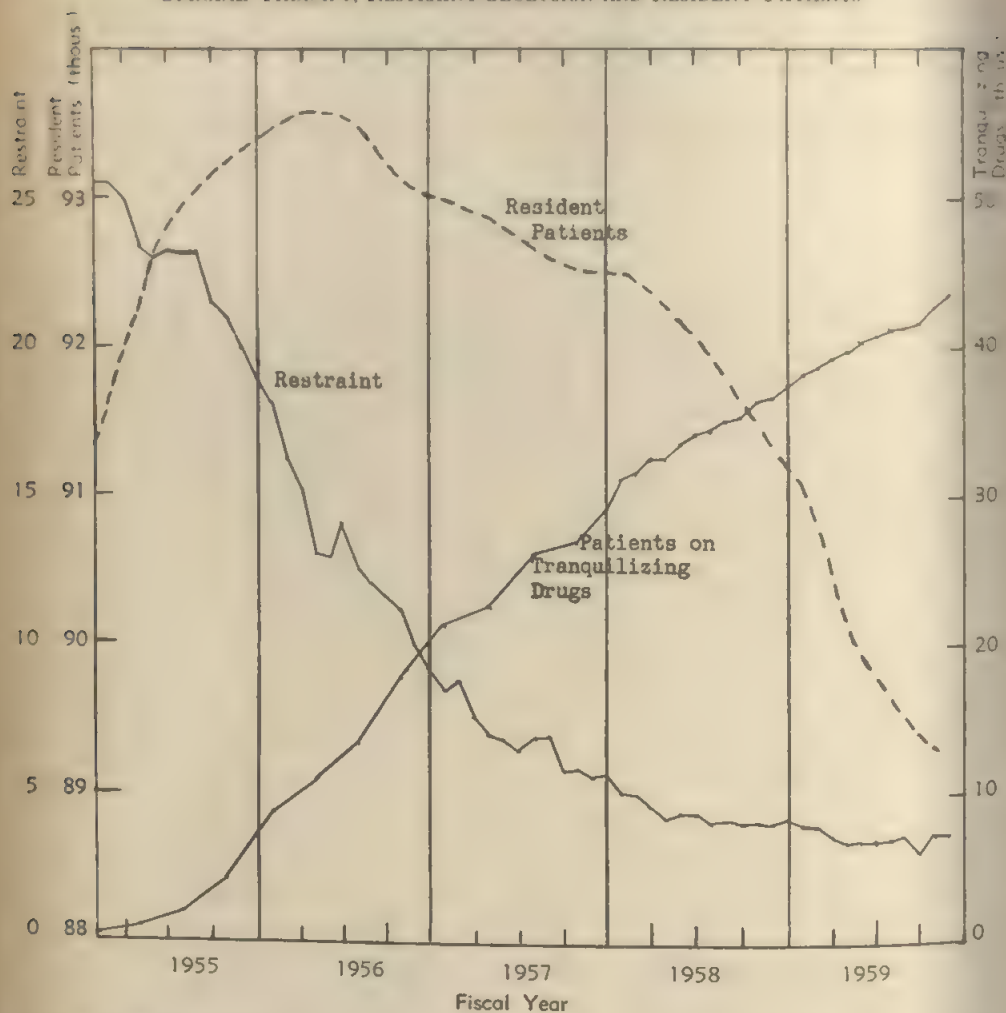
From the start there has been a steady increase in the volume of drug therapy (Fig 2). Since all treatment is at the initiative of the treating physician, and the medical staff of the Department numbers about 900, this reflects a relatively broad professional judgment, sustained incidentally by firm opinion among ward personnel of various grades. The number now under treatment is over 45,000 (including 3,800 in the state schools) and the budget for psychiatric drugs is \$2,200,000 per year. Chlorpromazine still accounts for the largest share with 26,000 cases and reserpine is next with 3,700 but a steadily increasing number of other substances, mostly phenothiazines, are coming into use.

What seems to be an undue decrease in the use of other methods of somatic therapy has been noted. For example, less than a thousand cases are listed as receiving electric shock therapy as compared with 4,000 in 1954, and psychosurgery has been all but abandoned, yet most observers agree that these treatments still have a place in the therapeutic armamentarium.

The proportion of cases under therapy with all forms of somatic therapy is greatest among the newly admitted at 68% (Table 3) and least among cases of over 10 years with 19%; it falls rapidly after the 1-4 year group where it still reaches 42% of the cases. It is interesting to note that drugs are most used in those classes of patients which have shown the greatest response in absolute numbers; improvement relative to previous results has less weight. The authors are of the opinion that experience with favorable response encourages more treatment of similar cases and failures have the opposite effect. When we turn to diagnosis as a guide to choice of therapy, we find much less specificity, and the percentage considered suitable for treatment shows surprisingly little variation from the general 30% average.

FIG. 2

SPECIAL THERAPY, RESTRAINT-SECLUSION AND RESIDENT PATIENTS



BEHAVIOR EFFECT

Reduction in the use of restraint and seclusion was one of the earliest overall effects of the new drugs, and the one which has been most consistent (Fig. 2). This was rapid at first but has now apparently reached a plateau value at one-eighth the original level. In spite of early fears, the drugs did not "wear off" although there has been a rather general tendency to try new products as they appear and each of these seems to find patients who respond particularly well to them. A variable preference among physicians for one or another drug is

also to be noted and this is taken to mean that the differences among many of the agents is not a decisive one.

POPULATION FALL (OVERALL)

The overall effect of drugs on the population had the same sequence as that seen on individual cases (Fig. 2). A behavior response was already measurable very early during the limited experimental use of chlorpromazine and reserpine in 1954 and was quite well marked early in 1955. Release effects came much more slowly after months of large-scale use; by the end of the first year this was clear.

TABLE 3

PATIENT TREATMENTS IN NEW YORK CIVIL STATE MENTAL HOSPITALS BY TIME SINCE ADMISSION OF PATIENTS TREATED, FISCAL YEAR ENDED MARCH 31, 1958

Therapy	Time Since Admission (Years)					
	1st	2nd	3rd	4th	5th	6th
Total Treatments Started	48,064	22,729	12,168	6,425	3,327	1,442
With Tranquilizing Drugs	32,961	14,729	7,521	3,405	1,671	735
With Electro Convulsive Therapy	1,488	2,386	872	331	65	10
With All Other	14,615	5,614	3,775	2,689	1,591	697
Total Number of Patients Treated	35,698	15,595	10,021	3,587	1,698	1,196
Average number of treatments per patient	1.35	1.46	1.35	1.73	1.17	1.17
Per cent of Patients available treated	31%	68%	42%	23%	19%	1%

A CAUSE AND EFFECT RELATION

The establishment of a cause-effect relation between drug use and fall in population was difficult for the first year but we could report that there was no important change of general operating conditions or of policy, and this left the drug effect as the most simple and direct explanation, supported by internal evidence (distribution of improvement in releases). The situation is more complex for the last 3 years of this program. In 1956 the Department began a new program of intensified treatment for newly admitted patients which has gradually been extended to all the institutions. In addition, a sweeping program of liberalization of hospital operations began to be felt in the second year and has gone on to full development in the last two years. A part of it, the "open hospital" system, brought freedom of the grounds to some 60% of all cases by March 1959, fully 10 times the figure recorded in 1956.

Without the first year's study, it would now be indeed difficult to identify the effect of drug therapy among the various new influences on the patient population. However, when compared with the first year's results it becomes apparent that the effect of the additional resources has been to intensify the results already noted in the first year but not to change their pattern materially. It also seems certain that the drug effect facilitated the liberalization of

hospital policy and it is generally accepted among our staffs that it would be quite impossible to operate as we now do without the use of drug therapy in liberal quantities. Another change of the new and liberalized regime has been the increased number of admissions by voluntary and semi-voluntary procedures from 1,770 in 1955 to 5,910 in 1958. This has led to an increase in the number of direct discharges and may in the future lead to a larger number of short-term cases.

One of the most important changes, however, remains the fact that the 15 mental hospitals described in this paper are now serving the total mental hospital needs of the growing population of New York State with 4,100 beds less than they needed 4 years ago and apparently the need is still decreasing. It is important to know what types of cases are decreasing and how is this improvement distributed through the hospital population? Is there any evidence as to the stability of this change? Are we dealing with a process which returns patients more rapidly to the community only to get them back into the hospital more rapidly? Is there a tendency to release the patients for a year or so and then receive them back as readmissions? The size of the population of a hospital is the result of a balance between additions and removals, and among the removals are deaths as well as discharges and other releases.

TABLE 1

MOVEMENT OF RESIDENT PATIENTS IN NEW YORK CIVIL STATE MENTAL HOSPITALS
FISCAL YEARS ENDING MARCH 31, 1955 THROUGH MARCH 31, 1959

<i>Fiscal year ended on March 31</i>	<i>Resident patients start of period</i>	<i>Admissions</i>	<i>Deaths</i>	<i>All released alive</i>	<i>All returns</i>	<i>Resident patients end of period</i>	<i>Change in Resident Patients</i>
1955	90,893	21,459	8,078	16,069	5,109	93,314	+ 2,421
1956	93,314	21,454	8,345	18,562	5,301	92,862	-452
1957	92,862	21,828	8,555	19,785	6,059	92,409	-453
1958	92,409	23,266	9,421	21,733	6,650	91,191	-1,218
1959	91,191	25,254	9,197	25,607	7,562	89,203	-1,988

What has happened to the other components of the equation?

STABILITY OF RESPONSE (IMMEDIATE)

It remained to be seen after the first year of success whether the results in terms of overall hospital figures would prove permanent. There were many who postulated that the effect on an individual patient was merely to mask the symptoms for a time, that the disease process went on relentlessly and would soon bring the patient back to the institutions in as bad a condition as if he had never had this brief reprieve. Even a brief reprieve would have been welcome but the overall figures up to the present time do not give any indication that we are dealing with an essentially temporary effect. Clinically, it has proved practical to carry an estimated 50% of cases for a time on maintenance drug therapy after leaving the hospital and this has undoubtedly stabilized the results. Now it can be said that the patients who are released under therapy with drugs show a somewhat smaller return rate than the non-treated cases in the first year after release. This may be a result of selection of cases since during the year 1954-55, 13,992 were placed on convalescent care and 5,104 were returned, or a total of 35%, and this percentage of returns has remained essentially constant since. In other words, a sharply increased number of patients released proved to be as stable in their adjustment measured by return figures as a smaller number previously released. Judged by this criterion, it would seem that the grade of cases released was not different from that previously obtaining; the number

of cases released is a function of the release criteria of the hospital but the number of cases returned is a function of social tolerance. We have no reason to believe that the social tolerance has increased in New York State during the last 4 years.

LONG-TERM STABILITY

A delayed instability of therapeutic result would be reflected in a rising proportion of readmissions; in fact, however, the proportion of readmissions has not risen. Tracing the relation between the two figures back to 1952, we find that readmissions have steadily made up almost exactly 27% of all admissions and this has remained so during the 3 years of large-scale drug therapy for which figures are available. It may be expected that this percentage will be increased, however, as the new and liberalized policy of voluntary admission begins to take effect since releases after such admissions usually result in administrative discharge, and more of the returning cases will probably be listed technically as readmissions and less as "returns from convalescent status," now usually maintained for about a year.

It is generally thought that socioeconomic factors have an important influence on the admission and release of mental hospital patients. From this point of view, it is interesting to note that there was no unfavorable effect from the economic recession of 1958. Population reduction continued during that year of depressed economy and increased unemployment although we had expected that an economic change might well reverse the trend.

TABLE 4

RELEASE FROM AND RETURN TO ALL NEW YORK CIVIL STATE MENTAL HOSPITALS BY TREATMENT STATUS, FISCAL YEAR ENDING, MARCH 31, 1958

	Males		Females	
	Treated with Tranquilizing Drugs	Not Treated	Treated with Tranquilizing Drugs	Not Treated
Population at risk ^a	21,433	25,906	35,294	23,433
Release Alive Rate ^b	21.3	11.1	19.3	9.5
Return Percentage ^c	39%	48%	35%	45%

^a Resident Patients 3/31/57 plus admissions during year.^b Includes releases on convalescent care, family care and escape per 100 at risk.^c Includes returns from all above statuses per 100 released alive.**DIFFERENTIAL EFFECT OF THE NEW TREND WITH REGARD TO MALE AND FEMALE CASES**

The population fall of the last 3 years has been 506 for men and 1,617 for women. It was noted that 21,433 male and 35,294 female cases received therapy (Table 4), that is, 60% of the women and only 43% of the men were considered suitable for therapy with drugs. This difference is noted in each of the age groups and in each diagnostic group and also when patients are divided according to duration of hospital stay. Nevertheless, the release rate for treated males is slightly higher than that for females, and the same is true of the rates for untreated male and female cases although releases among treated cases are twice those of untreated cases. It is an important question why a smaller proportion of male cases is considered treatable by drugs and by practically all other methods.

DEATHS

It will be noted in Table I that in 1958 there were 9,421 deaths in hospitals and that this represents a considerable increase over the 1957 figure of 8,555. Some of this is due to a trend toward aging of the population (Fig. 3) but it is in large part due to the recent epidemic of Asian influenza. Because of concern about possible late morbidity and mortality after drug therapy, we have been observing mortality statistics as a possible lead to any long-term effects not detectable clinically. It will be

seen (Table 5) that the age specific mortality figures are far below those of 1929-31, and the rates of 1955-57 were not raised by the introduction of drug therapy. The year 1958 shows an increase, however, in all but one age group and this result of the influenza may also be expected to be reflected in the 1959 statistics. The effect of drug therapy in reducing immediate mortality due to psychotic behavior is clearly seen in Table 6.

A certain amount of the most recent fall in population is to be attributed to the excess death rate in 1958 and 1959 but effect of this is of a transitory nature because 1,209 of the 1,343 increase of deaths since 1955 were in the over 65 group and 113 in the 55-64 group. Below the age of 54 the increase was 21 cases, yet the population effect with which we are most concerned is in the younger groups (Fig. 3).

Clinically it has not been possible to identify any evidence that there is any morbidity associated with long-term use of drug therapy, nor has this appeared in any of the reports of the state hospital pathology departments carrying on routine post-mortem studies. Another fact of interest is that although a certain number of cases develop depressions in the course of therapy with the phenothiazines the number of suicides reported from the mental hospitals has remained consistently below the average for the preceding 10 years although the variations in the totals are too small to be statistically significant.

FIG. 3

RESIDENT PATIENTS BY AGE

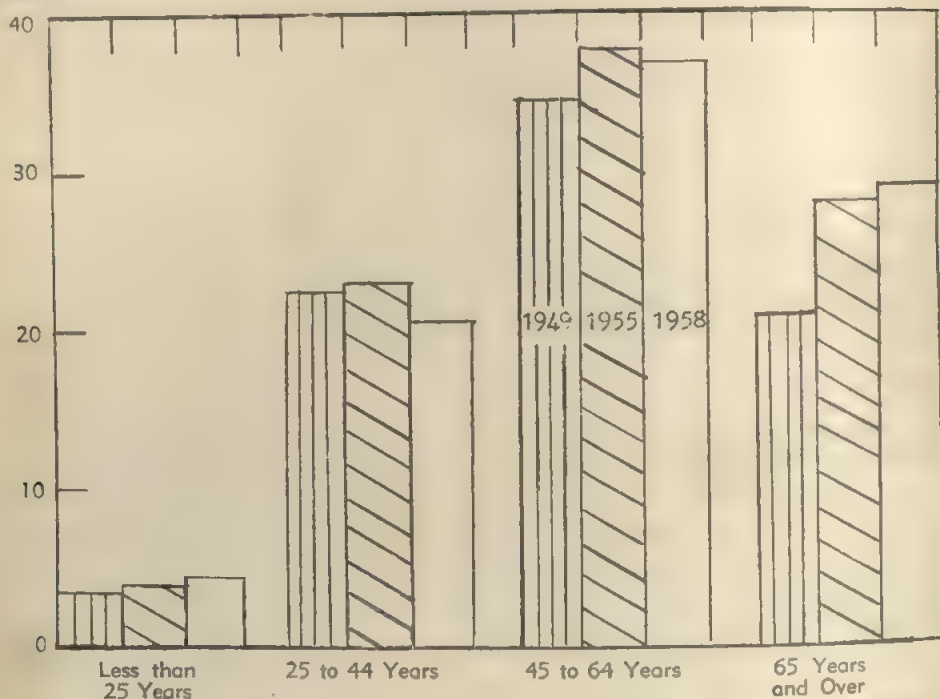
Thousand
Patients

TABLE 6

PATIENTS ADMITTED TO NEW YORK CIVIL STATE MENTAL HOSPITALS WHO DIED
WITHIN 6 MONTHS OF ADMISSION AS A PER CENT OF ALL ADMISSIONS, BY AGE

Fiscal year ended on March 31	All Ages	Age (Years)					
		Less than 25	25-34	35-44	45-64	65-74	75 and over
1955	13.0	0.4	0.8	1.4	7.7	26.5	43.0
1956	12.4	0.3	0.6	1.1	6.8	24.6	41.5
1957	12.1	0.1	0.8	1.0	6.4	24.9	40.3

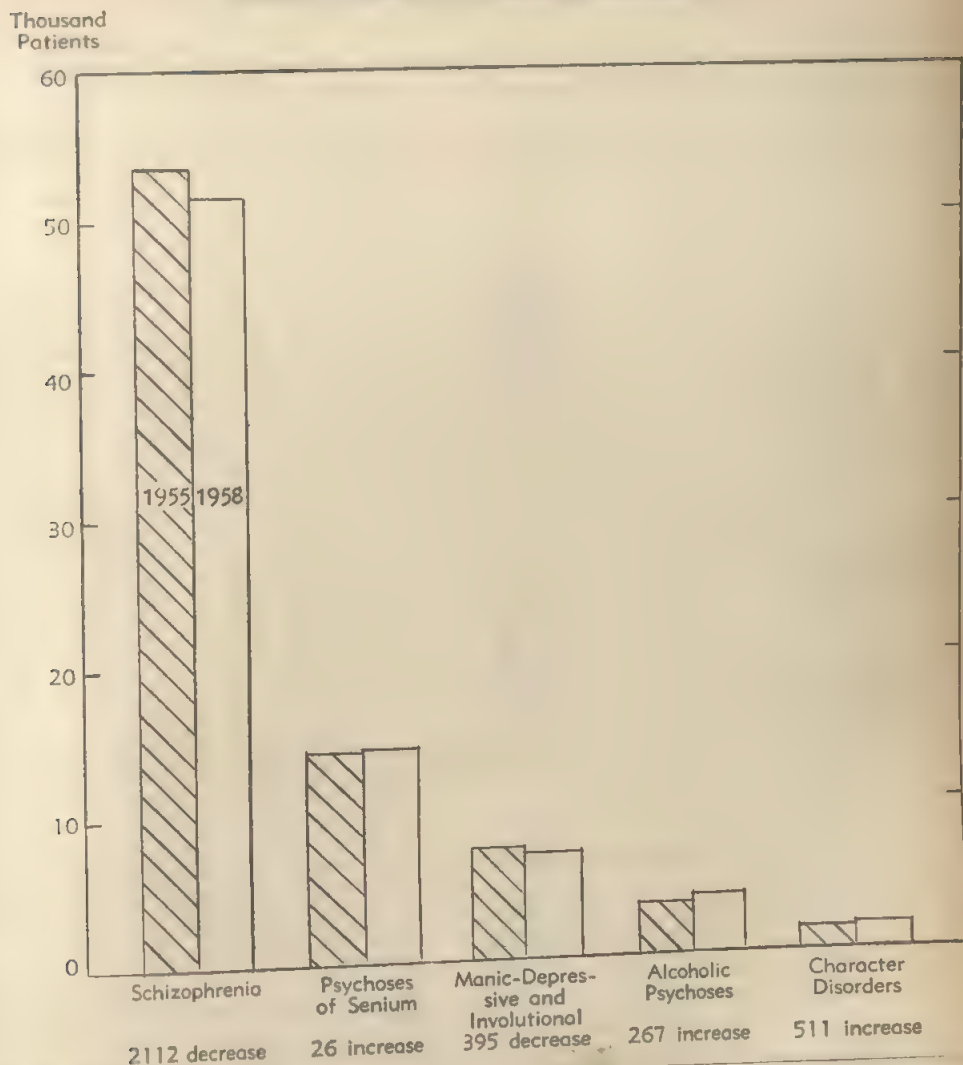
EFFECT ON AGE DISTRIBUTION

The emphasis on the increase of aged cases in the mental hospitals and the practical problems of preparing to care for a steadily increasing proportion of such individuals makes it important to notice how the population reduction is distributed as to age. It will be noted (Fig. 3) that between 1949 and 1955 all age groups increased although the largest increase was in the group over 65. The fall which has

now taken place has been most marked in the 25-44 category, which was reduced by 3,368, while the group aged 45-64 decreased 967. A rise in the over 65 cases and in the under 25 group continued, leaving an overall decrease of 2,123 for the 3 years analyzed. It should be noted that the ranks of the 65 and over are augmented by aging within the hospital cases by some 1,800 each year. This aging is an expression of the chronicity of mental disease and ac-

FIG. 4

RESIDENT PATIENTS BY MENTAL DISORDER



counts for fully half of all the over 65 cases. The reduction of population among the younger age groups apparent in Fig. 3 is one of the most hopeful elements in our data but a reservoir of chronic younger cases still remains and it is still being augmented by therapeutic failures.

REDUCTION BY DIAGNOSIS

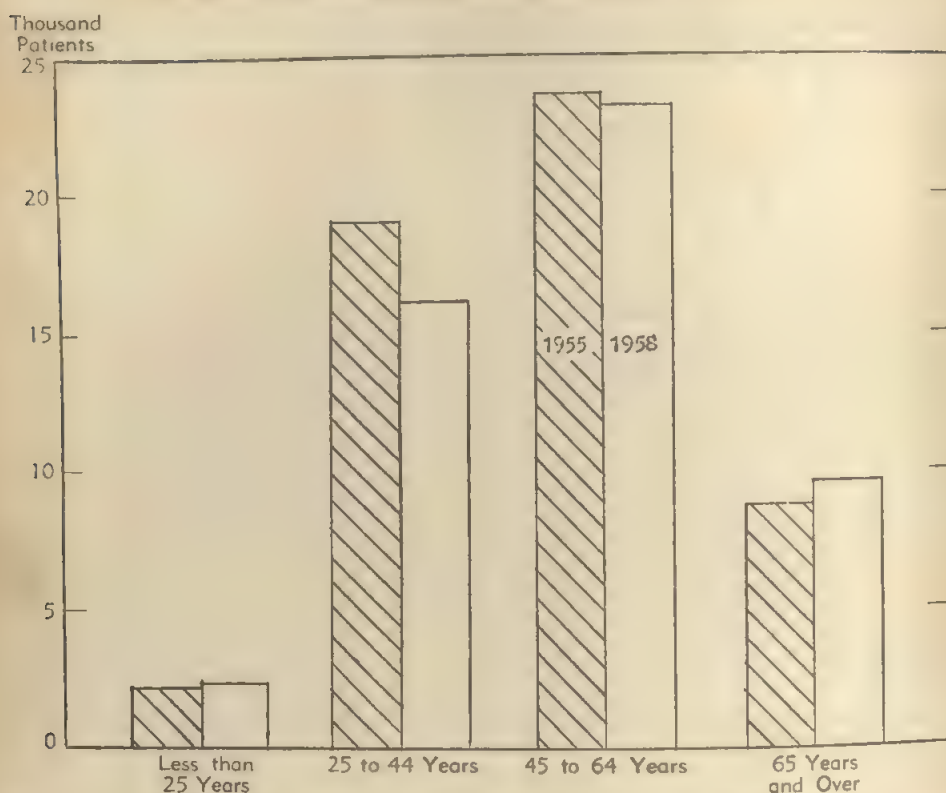
Comparing the hospital population of March 31, 1955 with that of March 31, 1958 (Fig. 4) after 3 full years of large-scale drug therapy, we find that there has been an overall reduction of 2,123 with a fall of

2,112 in the schizophrenic group, 395 in the affective psychoses and 420 in a mixed group including psychoneuroses, paresis, organic states of various types, *etc.* These were counter-balanced by an increase of 511 in character disorders, 267 alcoholics and 26 in the senium.

Within the group of schizophrenics (Fig. 5), the 25-44 age group showed a 3-year reduction of 2,979, the 45-64 year group showed a fall of 183 and there was an increase in the under 25 and the over 65, the first from a marked increase in admissions under age 16 and the latter as a

FIG. 5

RESIDENT PATIENTS WITH SCHIZOPHRENIA, BY AGE



result of receiving additions from hospital cases of long residence.

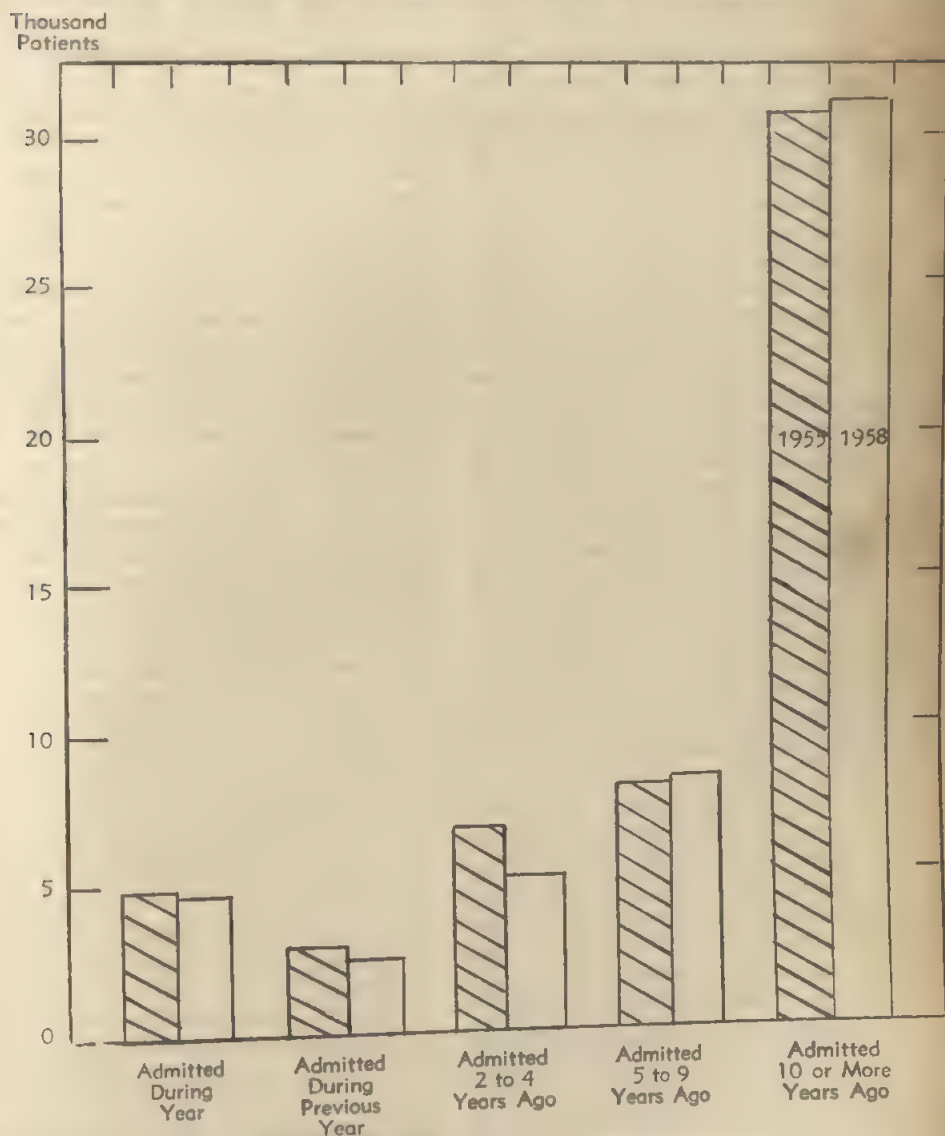
When we examine the schizophrenic group for duration of hospital residence (Fig. 6), the problem of chronicity appears in startling clearness. At one end of the scale is the 10 years plus group numbering over 31,000 and, in spite of advances in therapy, their number has actually increased by 527 in the last 3 years. The reservoirs from which this very chronic group are augmented have shown a clear-cut change. The 5-9 year class has ceased to grow, while the 2-4 year group has fallen by 1,463, and the schizophrenic cases in their second year of hospital life have diminished by 27%. The cases of the current year have diminished by less than 8%. Since the figures for the current year are a crude measure of speed of therapy, it would seem that we may have gained less in speed of therapy than in effectiveness in prevention of chronicity. A marked cut

in the second, third and fourth-year cases must in the long-term cut total chronicity very significantly. However, the problem of chronic schizophrenia will never be gone until its feed lines are cut off and we have no indications that we have done more than reduced them as yet. If we reduce the size of these sources by a quarter or a third, we may expect that much reduction of final chronicity but not more. Then, depending on such counterbalancing factors as (a) further extension of length of life; (b) continued increase of total population of the state; and (c) increase of other types of psychiatry, we may come to a new equilibrium which will require some further technical advance before it can be broken.

A glance at Fig. 6 will show that there are some 50,000 cases other than chronic schizophrenics in the New York State mental hospitals and even if the chronic schizophrenics were to be entirely eliminated, which appears to be unlikely from the

FIG. 6

RESIDENT PATIENTS WITH SCHIZOPHRENIA, BY TIME SINCE ADMISSION



above data, there will be need for extensive facilities for these other cases, most of whom belong to categories where modern therapeutic advances have made relatively little impression.

SUMMARY

In 1955 the New York State mental hospitals undertook a large-scale program of tranquilizing drug therapy which during

the first full year of its operation reached 27.9% of all cases(2). This was a 250% increase of use of somatic therapy in one year and was followed by a reduction of 500 in patient population, reversing a long-term increase of some 2,000 per year. The data for that year were analyzed and were compared with that of the year preceding when the population had increased by 2,500 and the conclusion reached that the addi-

tion of drug therapy was the only significant identifiable change which had occurred in the treatment conditions of the Department and that the favorable change was attributable in major degree to the use of chlorpromazine and reserpine.

Another 3 years have now passed and the fall has continued. The population on March 31, 1959 was 4,100 below the figure of 4 years before and this apparently represents a well-marked trend. It is, however, no longer possible to say that circumstances have remained essentially the same as they were before the use of drug therapy was undertaken; a whole series of progressive changes have occurred; a sweeping program of liberalization of hospital policy has developed; open hospital techniques, encouragement of admissions other than by judicial certification and the organization of a number of experimental programs have been undertaken. Intensification of treatment for newly admitted patients has been secured through assignment of additional personnel for admission services and special geriatric and continued treatment programs have also been set up. In spite of this, the pattern of change has not deviated significantly from that already identified when drug therapy was the only new modality. A significant increase of amount of change has, however, taken place but it becomes quite impossible to assign a quantitative role to each factor; what seems certain is that all these elements are mutually interdependent and reinforce each other. It now becomes important to analyze the trends for their significance with regard to future plans for mental hospitals, especially as many mental hospitals in various parts of the world have noted a decreased pressure for hospital beds or an outright fall in population. In some quarters these changes have been discounted as cyclical and unimportant and in others the attitude has been that it is now a matter of a relatively short time before mental hospitals will be empty and that the problem of hospital psychiatry has at long last been solved.

Our own data lead us to take a position somewhat between these two extremes and considerably toward the conservative side. The persistence of reduction for 4 succes-

sive years seems to rule out any cyclical variation and the fact that the reduction of population is limited to functional cases and most marked in schizophrenics points to the action of a specific therapeutic influence rather than a general change of policy. In New York during the last 5 years the number of cases actively carried on somatic therapy at all times has jumped from 4,000 to over 40,000, the number released from hospitals has gone from 14,362 in 1955 to 19,334 in 1958, and, in addition, the atmosphere of the state mental hospitals has been virtually revolutionized. Restraint and seclusion have been reduced to an eighth of their previous level and a series of liberal policies has been facilitated beyond what might have been dreamed of on such a scale 5 years ago.

However important these changes may be from the point of view of the mental hospital as a therapeutic organization, there are other facts which tend to support a more conservative attitude with regard to the extent that the present change may be projected into the future, and especially the projection of any factor of acceleration in the present process.

Although there has been a 34% increase in patient releases in New York State during the first 3 years of drug use, admissions were up about 12% and information from other hospital systems here and abroad indicates that this is a general phenomenon. The number of schizophrenic patients released has increased 39% during the 3 years for which data are available and the release percentage of chronic cases of up to 10 years' hospital residence has been increased strikingly, yet a simple review of the present mental hospital population indicates that there still are a considerable number of cases on the way to becoming chronic hospital residents; the number of 2-4 year cases, for instance, has been reduced by 27% but this gives secure promise to reduce the eventual permanently chronic group by this amount. Furthermore, mental hospital operations involve far more than schizophrenics. There are many other categories of cases and in our hospitals these have either remained stationary in numbers or have continued a long-term increase.

Finally, there is a small but very signifi-

cant group of cases, especially in the age group below 16, which have been coming rapidly to the fore in the past few years. Numbering less than 400 in 1950, these now are being admitted at the rate of 700 to 800 per year, and that figure would be higher if our facilities were more adequate. These cases must have more than double the hospital space of adults and much more personal service. Those who fail in therapy may look forward to a long life in hospital or a long career of behavior disorder in the community. Some feel that these should be elsewhere than in a mental hospital but society seems to have decided otherwise and we have been for several years subjected to unrelenting pressure for their care and treatment, and whatever else one may say it must be admitted that the problem is a psychiatric one.

Another group which warrants comment is the so-called character disorders. Patients in this group increased from 1,293 in 1955 to 1,804 in 1958. To a large extent this group overlaps the teen-age problem just described but some of them are adults. Although here, too, the battle rages as to the proper function of a state hospital, the result is still to send a larger group for such care. In the main, they, too, represent a type of psychiatric problem, although this is far from saying that every case of acting-out is properly classified in a mental hospital. What we are discussing here is the fact that an increasing proportion of such cases actually are coming to us and must be considered in our plans. Still in the same category are the alcoholics whose number increased somewhat in the last few years from 3,693 to 3,960. In the past, the mental hospitals have made but a limited contribution in this field, taking an almost neutral attitude in the rehabilitation of such individuals. This was justified only so long as we could do no better. As our facilities improve, a greater interest must be taken in this disorder. Alcoholism has long been identified as a psychiatric problem and whatever treatment has been available has tended to be in mental hospitals. It is inevitable that we shall be called upon to take a more positive role in this situation which is said to involve some 3,000,000 Americans. Up to the present, much of this

has been forced into the category of a sort of "deferred business" due to sheer lack of facilities. It seems inevitable that as soon as any space becomes available this question will be moved for a more satisfactory disposition. If we look only at the reduction in our population, we may forecast a rather gradual melting away of the chronic schizophrenic cases to perhaps 50 to 75% of their present number which is a humane and practical advance that would relieve New York State of a quarter of its present mental hospital population. Statistical data and clinical experience indicate that the reduction will be more rapid on the women's services than on the male side where fewer cases are found for therapy. For some time to come the number of long-term schizophrenic cases who pass their old age in the mental hospitals will continue to increase and will continue to leave the impression that the hospitals have been overwhelmed with geriatric admissions.

DIVERSIFICATION OF PRACTICE

Thus, while population reduction is a clear-cut fact and promises much for the future, if we look at the whole question more broadly we may see a somewhat different picture; if the mental hospitals are to meet the demands of society, they will have to continue to diversify their practice even beyond what has already been done. This will involve a continually larger admission rate, a more rapid turnover of cases, and the development of psychiatric care for a wide variety of conditions which at present are received in our hospitals but accorded relatively little attention. Society has many unmet needs in this area, and the mental hospitals have a responsibility here. It does appear that within the next few years some beds will become available at least in geographical areas which have already been able to keep up with previous needs to a reasonable degree. At the present time the New York statistics and the New York experience indicate that the unmet needs may outrun the prospects of new available mental hospital space, failing some revolutionary therapeutic advances. Yet it must be remembered that New York State now has some 580 mental hospital beds for each 100,000 of its general pop-

ulation. What the sequence of events may be in localities which have far less available space is not clear from our experience. Many factors, such as degree of urbanization, use of alternative facilities, especially for the aged, and local attitudes, must play an important role in determining what will be the need of psychiatric beds in any area, but it would seem that a very con-

servative attitude is justified. So far we have not heard of a single instance where psychiatric beds were no longer able to be utilized.

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TABLE 2
PATIENTS RELEASED ALIVE* FROM
NEW YORK CIVIL STATE MENTAL HOSPITALS

Fiscal Year Ending on March 31	Total	Time Since Admission (Years)				
		Less than 1	1-4	5-9	10-19	20+
1955	14,362	6,012	7,280	746	254	70
1956	17,058	6,772	8,876	996	310	74
1958	19,334	8,133	9,660	1,042	426	73
Per Cent Increase 1956 over 1955	18.8	12.6	21.9	33.5	33.9	5.7
Per Cent Increase 1958 over 1955	34.6	35.3	32.7	39.7	67.7	4.3
1958 releases alive						
Treated with Tranquil- izing drugs	11,363	4,277	5,795	929	321	41
Per Cent of 1958 Releases Alive Treated	58.8	52.6	60.0	89.2	75.4	56.2

* Does not include placements on family care or escape.

TABLE 5
AVERAGE ANNUAL DEATH RATE PER 1,000 EXPOSURES,* BY AGE
NEW YORK CIVIL STATE MENTAL HOSPITALS

Age (Years)	Fiscal Year Ending on March 31				
	1929-1931	1955	1956	1957	1958
Total**	119.3	85.0	85.4	84.8	91.3
Less than 15	17.5	3.7	3.6	1.6	3.4
15-24	51.3	5.1	7.0	4.5	9.5
25-34	41.3	8.3	6.2	10.1	8.6
35-44	45.9	10.6	10.1	11.4	12.9
45-54	59.0	24.5	20.8	22.2	24.4
55-64	95.6	55.0	57.4	50.4	57.8
65-74	175.5	134.7	135.7	137.1	145.3
75 and over	321.3	306.7	311.8	310.3	330.7

* Exposures—resident patients plus $\frac{1}{2}$ the deaths during the period.

** Standardized based on the age distribution of 1955 exposures.

DISCUSSION

JOSEPH BARRETT, M.D. (Williamsburg, Va.)—Any program that can reduce the population of a hospital system to the extent reported here must be quite gratifying. The fact that the 18 hospitals described in this paper are now serving the total mental hospital needs of the growing population of New York State with 4,100 beds less than they needed 4 years ago justifies the program. Percentagewise this is a 4.4% drop or 1.1% annually.

It seems to me that there may be a number of factors which make this great migration out of the hospitals possible—something other than the ataractic drugs.

First, there has been a decided improvement in the numbers of medical and nursing personnel. The need for this personnel was hard to sell on the basis of better care and increased psychotherapy, etc., but the general public can actually buy this additional personnel for the purpose of administering drugs, etc. This has led to more individual attention to patients, which in essence is an improved or increased total push program.

Second, there has been a change in attitude not only on the part of the family but also on the part of neighbors toward a mentally sick person returning to their midst. Here is a person who has actually been treated, a form of treatment they can understand. The patient's chemistry has been changed. The entire community has a more favorable attitude toward the mentally ill patient and we have found that not only previous employers but also new employers have a more favorable attitude toward a successfully treated mental patient.

Third, I think there has been a very definite change in attitude on the part of the general practitioner in the community. Here is a form of treatment he can actively participate in not only by contributing to the continuation of medication and observation of the results, but we see numbers of cases coming to the hospitals which the family doctor has tried to prevent by inadequate medication.

I have recently had correspondence from a family physician wanting to know how we were able to send home at the end of 3 weeks treatment a patient he had sent in

for long term care. So there has been much help from the outside as well as the push from the inside.

We have been having very similar experiences in Virginia to those reported by Dr. Brill in New York. We have found it most helpful to patients remaining out of the hospital if the medication and hospital supervision, through the work of a social service department, can be maintained for sometime. To this end we have follow-up clinics, which I am sure Dr. Brill has too, and here we meet additional problems. In the matter of medication we find that many patients are unable to provide the cost. When we talk about supplying it at hospital or public expense we run into a type of socialized medicine response. The value of follow up clinics is frequently questioned and we are presently making a detailed research study of 3 such clinics in the Eastern State Hospital area and will report this study when completed, but from my June 30, 1958 Annual Report the following quote is very significant:

"It is interesting to note that of the 1,604 patients released from the hospital during the year, 866 or 59% of these patients returned to the hospital. Of the 414 furloughed patients followed in clinics only 122 or 29% returned."

The seeming increase in mortality under drug therapy may well be due to masking of physical symptoms (such as nausea, vomiting, etc. and even fevers) and suggests a need for continued and increased alert medical personnel.

Volume of Drug Therapy in Virginia:

During the year ending June 30, 1958 in the Virginia hospitals we had a total of 15,385 patients under drug treatment. This is an increase of 5,800 over the previous year. We still use much shock therapy, but on a reduced scale.

Stability of Response:

I do believe that the degree of stability derived from the various drugs must be attributed to many other factors such as attitudes, concepts and general willingness to accept what appears to be permanent damage in some types of mental disorders, and the ability of the hospital or clinic to proffer continued guidance.

CHILDREN AND ADOLESCENTS WHO HAVE KILLED¹

LAURETTA BENDER, M.D.²

Since 1935 the author has personally known 33 boys and girls who, before they were 16 years of age, had been associated with the death of another person either by causing or being blamed for a death by themselves or others. All of these boys and girls have been examined, many of them repeatedly, in public institutions of New York.

This present brief study will analyze the significant data concerning this group of 33 individuals in terms of their background, the incident that resulted in death to the victim, any specific clinical pathology, the reaction of the young person involved and his or her subsequent career. There will be no effort to discuss individual cases or elaborate on psychodynamics. This has been done before for some of these cases (1, 2, 3). Longitudinal or followup studies have also been published (4) which have been further extended for the present study.

There were only 2 girls in the series. They were 5 and 8 years of age when each accidentally ignited the clothes of a younger sister leading to death within a few hours. The 31 boys were 5-15 years of age at the time of the fatal incident in which they were involved. Six were 5 and 6 years, 5 were 7 to 10 years, 9 were 11 and 12 years, and 11 were 13 to 15 years. Thus, 13 children were under 11 years or prepuberty and 20 boys were 11 to 15 years of age.

There were 11 Protestants of whom 9 were Negroes and 17 Catholics including 2 Puerto Ricans.

Intellectually, 2 were grossly retarded, 5 were borderline defective, 20 were in the normal range with IQ's recorded from 80 to 110, 6 had higher IQ's. Eight of the boys were non-readers (including the two grossly defective), 9 were retarded readers, 9

attained average reading skill and 4 were superior readers.

Before considering the clinical data it will be well to emphasize that the 33 boys and girls can be readily considered in two nearly equal groups. Sixteen were involved with the fatal incident and known to the author between 1935 and 1944 or the first 10 years of this study. They are now 20 to 40 years of age. This group is characterized by the lack of more recent intensive methods of clinical study and diagnostic evaluations and by their adulthood and followup studies that indicate the course of their life patterns. Seven are in high security institutions. None was considered schizophrenic at the time of the fatal incidents, although several were considered defective or brain damaged. However, 5 have been diagnosed as schizophrenic and psychotic subsequently. Two are known to be doing well, including a girl, in spite of very bad home circumstances. Three are presumed to be doing well, having been placed in adequate foster care and further difficulties are not reported. The remaining four, after a considerable period of training school or hospital care, are maintaining a precarious status in the community.

Seventeen were involved in the fatal incident in the last 10 years since 1948 and are currently 8 to 22 years of age (10 are still under 16 years). This group have been subjects of intensive clinical studies and most of them are still under treatment in New York State hospitals or training schools immediately available to the author (5 are currently in the children's unit of the Creedmoor State Hospital). Five are in the community under careful supervision, two others have been out but further trouble led to higher security institutionalization. It is in this younger group that a great deal of severe pathology was uncovered which will be described.

Next, let us consider a classification by mode of death.

1. Death was caused by fires set by 6

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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children, including the two girls. Their ages were 5 years (two), 6, 8 and 12 years (two boys). These were all evidently unintentional deaths. However, like the serious fire-setters described by Helen Yarnell (5, 6) they all had very disturbing home situations. One was grossly defective and his two defective younger brothers perished in the fire, set by the three while they were left alone. Two of these children now under hospital care are schizophrenic. The other three, belonging to the older age group, have made satisfactory adjustments, two to foster care. All of these children showed the severe depressive, guilt-ridden grief reaction previously described (1). There was no record of these children setting fires subsequently. On the other hand, among the 27 children who caused death by some other means than fire, there were 8 who were compulsive fire-setters, including all 5 who were associated with a death by drowning.

2. Death by drowning was associated with 5 children, ages 5, 9, 10 (two boys) and 11 years. Because of the nature of this type death, in none of these instances was it ever known whether the child implicated was guilty of any intentional act either of omission or commission. In one case of a 10-year-old boy, he and his friend were having a friendly wrestle on the river bank and his friend fell in and could not be saved. This boy had the most violent reactive psychotic depression with a phobia against water even for washing, bathing or drinking for some time. Like the others in this series he also had nightly dreams of drowning himself or other people or of sea monsters after him or of submarine disasters. These boys all required months or years of hospital care for their reactive depression. Two were put on convalescent care but after aggressive crimes were placed in corrective institutions. All were fire-setters. All have threatened to kill. Three have been diagnosed as schizophrenia. One was associated with the death of two children at some months' interval.

3. Three younger children were associated with deaths not readily classified. A 5-year-old blind defective boy with retrolental fibroplasia following premature

birth choked his 4-week-old sister to death when he was bothered by her crying. He also threatened to repeat this on other crying children. He is hospitalized. A 5-year-old boy considered retarded and showing an impulse disorder following an infectious encephalitis, was accused of pushing his 3-year-old brother out the window. Now at the age of 23 he is hospitalized as a psychotic schizophrenic. A 7-year-old boy, long recognized as a problem, mildly microcephalic, impulsive and retarded, was playing on the roof with another boy who fell off and died.

At this point we can summarize this younger group of 14 children who neither intended nor expected the death that was the consequence of their activities. Except for the low grade defectives they reacted with shock which was not closely related to their basic psychiatric disorder. None however, was free, even before the incident, from very disturbing family, social and personal disorders. A few involved in fires were able to mature satisfactorily.

4. Death by stabbing with sharp instruments. This was caused by 7 boys ages 6, 9, 11 (two boys), 13 (two boys), and 14 years. The necessarily close physical relationship usually left little doubt as to the person involved. In 5 cases it represented an impulsive act of uncontrollable rage, with the weapon happening to be available or offered by another boy. The psychopathology will be discussed briefly with the next two groups.

5. Death by repeated blows with a heavy object. There were 6 boys in this group ages 8, 9, 13 (two boys), 14 and 15 years. It was usual that the first blow was impulsive like the above stabbing group, and then the blows were continued blindly or to quiet the victim. In one case a sex act had preceded the blows, in another a robbery.

6. Shooting caused death by 6 adolescent boys, 11-14 years. This act implied some planning and preparation or else defective judgment. In one case the death seemed entirely accidental, a friend being shot while the two boys examined a gun.

These last three categories, in which death was caused by striking with a sharp instrument, or repeated blows with a heavy

object, or shooting, included 19 of the 33 cases. Except in the case of the accidental shooting the victims were aimed at directly although often impulsively. This group showed the most pathology with schizophrenia, brain disease and/or epilepsy in all cases but three. These 3 were among the older cases in which such pathology had not been determined. Also in this group only 4 of the 18 boys were under 11. In this group consequently we get the reaction typical of puberty or of the young adolescent boy. This represents an attempt at denial, suppression of anxiety and guilt, amnesia and various repressive phenomena. Such pseudopsychopathic defenses (7, 8) may mask the basic schizophrenic picture or organic or epileptic disorganization for a while. However, several of these boys who showed "no psychosis" at the time of the examination or court hearing and were placed in correctional institutions, subsequently were found to become psychotic and transferred to mental hospitals or hospitals for the criminally insane and were diagnosed schizophrenic and/or epileptic.

Of equal interest is the evidence that 3 boys developed clinical epilepsy with convulsions some months after they committed the fatal act. Records of EEG's are available on 15 boys. Five were reported normal. Ten were pathological, indicative of epilepsy. In 3 boys the EEG disturbance reached its maximum in mid-adolescence and tended to become normal in the years the boys were under treatment in a controlled environment and received anticonvulsant drugs. But under emotional strain they were liable to explode and tended to seek isolation to control themselves.

Five adolescent boys had accomplices. In 2 cases, a weapon was furnished by one boy to another in a fight. In the other 3 cases it could never be determined which of two boys was responsible for the fatal blow or shot.

Six boys caused 2 deaths each and one boy, 3 deaths. With one exception, these were young boys and the multiple deaths resulted from a single fire. In only one case in this series was a boy associated with two deaths (by drowning) at some months' interval.

The final diagnostic classification in-

cludes 3 familial defectives (1 low grade, 2 borderline), 12 schizophrenics (9 in childhood and 3 recognized first in adulthood), 3 epileptics (and a fourth possibility), 7 chronic brain syndromes without epilepsy but impulse disorders, and 10 psychoneurotic depressions reactive to the situation.

Fifteen of these 33 boys and girls had psychiatric evaluation preceding the incident that led to the death of the other person or persons. In the majority of these cases there had been recommendations which had not been followed. In 5 cases there are on record official reports indicating that the boy was seriously dangerous. Of course, many other children have been described as dangerous who have not proven so, and in general we do have to remember that for a child to kill requires a certain combination of factors which include a disturbed, poorly controlled, impulsive child; the victim as an irritant, and an appropriate or handy weapon coinciding with lack of protective supervision.

However, there are certain dangerous symptoms of a psychiatric nature which should be considered as significant, especially when they occur in combinations, as follows:

1. Organic brain damage with an impulse disorder, and abnormal EEG and epilepsy (perhaps latent).

2. Childhood schizophrenia with pre-occupations with death and killing in the pseudoneurotic phase or with antisocial paranoid preoccupations in the pseudopsychopathic phase.

3. Compulsive fire-setting.

4. Defeating school retardation (reading disability).

5. Extremely unfavorable home conditions and life experiences.

6. A personal experience with violent death; thus having once been associated with a death, a child is always dangerous thereafter.

The psychodynamics of a child or adolescent held accountable for a death is a separate topic. Essentially the prepuberty child experiments with every method to prove to himself that death is not possible, while the adolescent tries to deny to others

both his guilt and feelings of guilt. Thus both are dangerous and misunderstood.

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PROBLEMS FOR MEDICAL PRACTICE PRESENTED BY FAMILIES WITH A SCHIZOPHRENIC MEMBER¹

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The practice of general medicine on a special psychiatric ward encountered consistent difficulties which appeared to be manifestations of patterned emotional processes. The medical practice was one part of the clinical services offered a series of family groups with a schizophrenic son or daughter who participated in a project designed to study the emotional problems of the family unit from the vantage point of a long term psychotherapy. The consideration of the difficulties in the medical situation led to an effort to describe and conceptualize characteristic modes of relating of the family members in much the same way that difficulties in psychotherapy are studied as derivatives of emotional processes.

The project of which this work was one part has been described elsewhere (3, 4, 5). A series of 7 family groups consisting of both parents and a schizophrenic son or daughter participated for periods ranging from 4 to 33 months. The clinical work centered in a psychotherapy designed for the family unit. During the period of treatment the families lived on a special psychiatric ward operated by the project staff.

The medical work was carried out in a ward clinic operated by a psychiatrist on the project staff. This service was supplemented as indicated with consultation and other clinical services easily available in a large medical research center. The clinic was structured to operate as much as possible like an outpatient service. The responsibilities of the clinic were carefully defined to distinguish them from psychiatric functions. When an emotional problem was presented for medical attention, the responsibility of the clinic was con-

sidered discharged when the nature of the problem had been recognized. The treatment of emotional problems was a psychiatric responsibility, and many things commonly handled symptomatically in medical practice were, in this situation, matters for attention in psychotherapy. The doctor necessarily dealt with those emotional problems that operated to impair the medical functioning of the clinic. The experience over a 3-year period was that intense emotional forces were consistently present which could cause difficulties of this kind.

The total clinical situation afforded continuous direct observation of the functioning of each individual in relation to his family and others both in psychotherapy and on the ward; this provided a view of ongoing family functioning in which the relating in the medical situation could be seen in its current context. It appeared that the turning to and using of medical services was often to a striking extent an enacted emotional process which took the form of an interest in medical diagnosis and treatment.

The presence of such a problem was of practical relevance since significant, poorly defined medical problems were not uncommon especially in the parents, and effective medical service was often clearly indicated. The use of the medical setting by the family members for emotional purposes was often so intense as to make it difficult for the doctor to function responsibly as a physician. This was the case whether or not significant medical problems were present, but was minimal on the few occasions of actual medical emergency. The process of settling even trivial medical matters in a satisfactory sensible way was often laborious and difficult. These difficulties were characteristic in the medical work with the parents and the schizophrenic sons or daughters, but were rarely experienced with normal siblings. The histories indicated that the families' use of medical serv-

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ices in the past had been similarly involved in acted out emotional issues.

An example of the problem :

A mother had avoided serious medical consideration of a lower abdominal pain associated with the menses, of gradually increasing intensity over several years' time. She was anxious and tentative in approaching the clinic about it. A consultant in gynecology was asked to examine her. He found a pelvic mass and recommended examination under anesthesia, D&C, and laparotomy if indicated. With no mention of it on the ward, the mother consulted practicing gynecologists during visits to the city. One doctor called to describe his experience. He said that the mother had been unwilling to provide a history and asked for his professional opinion on the basis of examination only. He said he had done the best he could for her under difficult circumstances and asked to be informed of the findings if surgery was done in order to check his clinical impression. Later a laparotomy was performed and a rather large fibroid uterus successfully removed.

The numerous difficulties in the medical situation take on some order when seen as manifestations of specific emotional processes. Many observations indicated that the parents and the schizophrenic child discriminated poorly between intense feelings of helplessness and anxiety on the one hand and evidences of medical problems on the other. Much of their functioning appeared to follow from an assumption that feeling helpless was equivalent to being ill, and not feeling helpless was equivalent to being healthy. For example, a person could notice something physical and estimate it to be of no consequence. The estimate might be accurate or not and yet be largely in the service of a denial of feelings of helplessness.

By defining the characteristic ways the family members were dealing with intense feelings of helplessness in the medical situation two general modes of functioning are identified. The first and more common is described as an acting out of feelings of helplessness, the second as an acting out of a denial of such feelings.

The first mode of functioning, was characteristic of the mothers and the schizophrenic sons or daughters and was also

common for the fathers. It could be gross or so subtle as to masquerade for sensible action. The person related himself at each step of his dealings with the doctor in a way that accented helplessness. The decision to arrange an appointment could be avoided and the doctor's attention sought outside the clinic. This took the form of vague allusions to health matters in the context of a social greeting, acting sick or speaking of symptoms to others in the doctor's presence, and messages about vague ailing that the doctor heard as a rumor from others. The doctor could later discover that his response or lack of it had been given the weight of a professional opinion. Under such circumstances, there was ambiguity about whether or not the person was dealing with the doctor in his professional capacity. This ambiguity was frequently present in clinic appointments also when the person related himself as though he were in a social situation.

In speaking of his problem the person emphasized illness. Physical experiences and incapacity were elaborated beyond the actual difficulty. Medical terms were used authoritatively as though they adequately defined the situation. Past histories were distorted and past medical opinions and diagnoses introduced to document a picture of major illness. The emotional tone was commonly grim, urgent, and serious and could be imperiously demanding, plaintive, or simply insistent. This feeling was infectious and could tend to hurry the doctor into a view that the problem was actually an emergency. Medical inquiry about specific points and attempts to confirm impressions often met with obtuseness, vagueness, irrelevant elaboration, helpless unresponsiveness, or pressure for treatment.

When the doctor stated an initial clinical impression, the patient often became more thoughtful and at times decided to postpone medical work. A statement that diagnostic study revealed no evidence of a medical problem was often followed by a critical point in the clinical relationship. When a definite diagnosis was made it tended to be seen as the source of all problems. Medical treatment was often complicated by vagueness about symptoms

and pressures to prolong the use of medications. With the completion of treatment, a similar critical point in the clinical relationship was often reached.

At such critical points the person could create an unmistakable impression that he found the doctor unsatisfactory. This operated as an intense pressure to alter medical opinion to accommodate to emotional goals. The doctor seemed to be faced with the choice of losing working contact or compromising his best judgment. When such a point was reached the extent of the emotional use of the medical situation was unequivocally apparent. This anxious encounter between the emotional process and medical judgment could then resolve toward a more adequate recognition of the actual problems.

Throughout the medical relationship, the acted out helplessness appeared to maintain an emotional pressure to induce the doctor to assume a very great responsibility for the intense feelings by virtue of a diagnosis of illness. The person functions as though the action message is—"I feel intensely helpless, therefore I am ill. The doctor must recognize this, and when he has agreed, I then have an answer to my problem." The finding of any physical condition is one of the things that the doctor can do which appears to be taken as at least a token concurrence.

A characteristic example:

A mother in her 50's arranged an appointment several weeks after the family arrived. In the early weeks on the ward she had often commented about a variety of ailments. In the initial appointment she spoke with an urgent plaintiveness of pains in the neck. Persistence by the doctor developed a reasonably trustworthy history out of much diffuse talk. After a local examination a preliminary clinical impression was conveyed. The mother responded by repeating her own diagnosis as though to ask the doctor's assent. When he replied that his impression was somewhat different, the mother introduced another problem. Further diagnostic study over a number of weeks revealed a minor chronic medical problem which was not responsible for the long standing distresses of which she complained, and supported the view that these were on an emotional basis. The mother's acted out presentation of herself as a chronically ill helpless

woman made for difficulty in evaluating her actual medical condition.

A second mode of functioning is described as an acting out of a denial of feelings of helplessness. It was characteristic of the fathers, occurred also in mothers, but was not seen in the son or daughter. Problems were presented in a manner that emphasized the health of the person. Symptoms and incapacity were minimized out of proportion to actual difficulty. Past histories were distorted, the negative findings from previous medical check-ups emphasized, and the value of previous medical efforts minimized to support a picture of physical health. The possibility that a problem was psychological could be given prominence. The emotional tone was commonly casual, friendly, jocular, and appealing, and tended to lull the doctor into a premature view that no problem existed. Medical inquiry encountered vagueness about simple facts, plausible explanations, reassurances that the doctor need not worry, and when anxiety mounted, actual retreating. An opinion that a medical problem existed was the occasion for an anxious point in the clinical relationship. The acted out denial could continue into the treatment situation in the form of a casualness about treatment measures and unreliable reports of progress.

The emotional pressures appear to operate to induce the doctor to assume a responsibility for problems with feelings of helplessness by virtue of a diagnosis of health. The person acts as though he were conveying the message, "I am almost certain that I am not helpless, therefore I am in good health; a doctor must recognize this and when he has agreed I will then be certain of my answer to the problem."

A striking example from the medical history of a father:

After a period of some weeks during which he had noticed difficulties in an important sense organ, he casually mentioned them to a physician friend. His friend apparently sensing that the matter might be of some moment examined him and quickly recognized a serious problem. Appropriate attention from an outstanding specialist was promptly arranged. The indications were that the serious loss of

function that resulted was largely a consequence of delay in arranging appropriate medical attention.

On many occasions two or more family members were active about a medical matter. A variation of the acting out of feelings of helplessness could be identified in these situations which differed in that the problem was seen to exist in another rather than in the self. The most common form was a parent's action from concern for the schizophrenic son or daughter, the mother more commonly than the father. The mother's acted out concerns about the father were also significant.

In some situations the concern for the other brought about the medical consultation. In other situations, medical work already initiated by one member could become the focus of the acting out process of a second. The second member might even move to displace the other from his position of dealing with the doctor about his own problem. In a milder form he could simply invite himself to be also present at the other's appointment. The member whose health was being considered might accept the concern of the second member as his own; might go along with it without acceptance; defensively oppose it, or on occasion maintain his own view. The doctor was often looked to for a resolution of the intense differences.

The emotional pressure in this other appeared to operate to induce the doctor to assume a great responsibility for feelings of helplessness by virtue of a diagnosis of illness in the other. The person functions as though he were saying, "I feel helpless, it is because he is ill; a doctor must agree with me, and when he does, I then have an answer to my problem." The most prominent and intense of all the situations involving more than one member were those in which one or both parents acted out intense feelings of helplessness externalized as a medical problem seen in the son or daughter.

SUMMARY AND CONCLUSIONS

Medical practice with 7 families with a schizophrenic son or daughter regularly

encountered difficulties in accomplishing medical evaluations and treatment. The use of medical services by the parents and the son or daughter was extensively involved in intense emotional processes. Two modes of relating are described as an acting out of feelings of helplessness and an acting out of a denial of these feelings. A variation is described in which the acting out of feelings of helplessness took the form of a concern about another.

The emotional pressures tended to lead to inaccurate medical overdiagnosis and overtreatment in response to the acted out feelings of helplessness and to inaccurate medical estimates of good health in response to the acted out denial pattern. When medical findings differed from the emotional view, the clinical relationship could reach a difficult point. The problems in the medical experiences appeared to be one clear evidence of general processes pervading the family emotional life.

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THE GENERAL PRACTITIONER AND THE PSYCHIATRIST¹

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We psychiatrists sometimes overlook the fact that the major portion of psychiatric care is being handled by the general practitioner. It therefore behooves the psychiatrist to try to understand and help the generalist with the problems he encounters in this field of medicine. With this in mind, we have made a survey of the attitudes of some general practitioners toward psychiatry and psychiatrists.

A questionnaire was sent to 600 members of the Washington State Academy of General Practice. The comments contained in the 416 questionnaires that were completed and returned form the subject of this report.

RESULTS

PSYCHIATRIC EDUCATION

Sixty percent of the respondents felt that their psychiatric training in medical school was reasonably adequate for their general practice needs. This was enhanced by subsequent postgraduate courses and reading but their own clinical experience formed the main basis for their psychotherapeutic endeavors.

Some typical criticisms of their psychiatric education were as follows:

Too many cases were shown of psychoses, which we refer anyway, and not enough attention was given to the usual run of office cases such as anxiety tension states.

Our course was impractical with too much theory and almost no demonstration of ordinary counseling techniques such as I have to use every day in my practice.

Psychiatrists should keep on teaching us at our county medical society or hospital staff meetings, but mostly with our own patients that we refer to them.

I would like to have more round table dis-

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cussions of actual problem cases instead of formal postgraduate lectures.

PSYCHIATRIC PATIENTS IN GENERAL PRACTICE

The respondents generally seemed to be well aware of the emotional component of illness.

Anyone who is sick is bound to be more or less upset and vice versa. I try to give all of my patients what moral and emotional support they need.

The percent of general practice that was predominantly psychiatric averaged 24%. The respondents estimated that on the average they could take care of 78% of their psychiatric patients themselves. Fifty-one percent enjoyed taking care of their psychiatric patients as much as caring for their other patients.

The main complaint about psychiatric patients in general practice was that they take too much time, and that they are difficult patients to help.

These patients take a lot more time and are less remunerative than other patients.

My results with these patients are hampered by the fact that often there is not much to work with or the environmental pressures are so overwhelming, and there is not much I can do to correct these.

PSYCHIATRIC REFERRALS

Sixty-nine percent of those who replied would like to refer more of their patients to psychiatrists. They hesitate to do so, however, because of the expense to the patient (72%), patients often resent it (43%), the lack of available psychiatrists (32%) and the failure of psychiatrists to have been of much help in the past (25%). Some typical comments regarding referrals were:

The patients who need psychiatric care the most, often resist such a suggestion. It is often hard to get a patient to accept an emotional cause for his illness and I have to approach the problem obliquely or lose the patient.

I would like to refer more patients but only the well-to-do can afford psychiatric care and

few of my patients fall in this class, especially when the results are often uncertain.

Seventy-two percent of our respondents spontaneously complained of the lack, or the inadequate nature, of psychiatric reports.

Psychiatrists should keep the family doctor informed of the patient's progress. Too often we never hear from the psychiatrist at all.

Few of the psychiatrists ever tell me what is really wrong with the patient or how I should proceed with treatment.

OPINION OF PSYCHIATRISTS

Twenty percent of the respondents were more critical of psychiatrists than other specialists. Of those who were critical, 41% felt that psychiatrists are unrealistic, 33% that they are too unstable themselves and 27% that they seldom helped their patients. Some typical comments were as follows :

Only too often my patients tell me that the first interview with the psychiatrist has been a discussion of fees to be paid. I do not practice this way nor do any of the other doctors I know.

Psychiatrists should be doctors first and psychiatrists second. We never see them at staff or medical meetings.

I get up at 3:00 A.M. to see patients yet when I have an emergency psychiatric case, the psychiatrist's secretary won't let me talk to him and when he eventually does call back he can't see my emergency patient for two weeks.

Surprisingly, 36 of the respondents spontaneously criticized psychiatrists for giving too much electroshock and drug treatment and not enough psychotherapy.

It is hard to find a good psychiatrist. Some of them want to give most of the patients I refer a Freudian psychoanalysis. Others rush them into shock treatment and tranquilizers when what I had in mind was some experienced counseling for the patient.

While most of this paper has dealt with adverse criticism of psychiatrists, the general tone of the respondents was sympathetic and understanding of the psychiatrist's special problems.

Most of the respondents felt that the general practitioner should be better informed of the psychiatric field. This is a long way to go.

It is encouraging to note that the younger respondents were better satisfied with their psychiatric training, received a greater proportion of their practice as psychiatrists in nature, and felt they could, and would, take care of a greater percent of their psychiatric patients as compared to the older practitioners. It is evident that progress is being made in this field but much remains to be done to bring psychiatry up to the level of other specialties in the eyes of the generalist.

SUGGESTIONS

1. Undergraduate as well as postgraduate education should emphasize the clinical demonstration of borderline office-type psychiatric cases as well as classical textbook cases.

2. More consideration should be given to teaching counseling techniques. Most of our respondents felt that the maximum time they could spend with each of their psychiatric patients was one half hour a week. Intensive psychoanalytically oriented procedures are obviously out of the question for the general practitioner.

3. Psychiatrists must be more conscientious, realistic and helpful in sending their reports to the referring generalist.

4. Psychiatrists should explain the reason for such unusual medical practices as charging other doctors and their families collecting fees before prolonged psychotherapy is undertaken, not answering other doctors' calls while in a therapeutic session or refusing to take patients who have a poor prognosis such as alcoholics or psychopaths. Better yet, we might consider changing some of our procedures to bring them more in line with the accepted standards of our medical colleagues.

5. The most obvious need is for more psychiatrists and better therapeutic techniques so that more patients can be helped at less cost to the patient.

COMMENTS

The increasing acceptance of psychiatry by the public has been due to orientation

regarding the facts of mental illness. With current efforts under way to achieve this at the lay level, it seems worthwhile to review some of the obstacles and misunderstandings that persist within the "family" of our own profession. The rapport used by psychiatrists with their patients might well be employed "at home" to strengthen intra-professional ties. One example of such an effort is the American Psychiatric Association-American Academy of General Practice Joint Liaison Committee.

That obstacles exist to mutual understanding has been demonstrated by the difficulty of these two groups in laying the groundwork for a free avenue of communication. One of the problems in which a common denominator has been elusive is the tempo of general practice as compared to that of the practice of psychiatry. The suggestion has been made that the general practitioner set aside one afternoon or evening a week for his psychiatric patients. When one considers that most generalists see from 40 to 60 patients a day, it should be obvious that this would impose an impossible strain on the practitioner whose much needed time for family and recreation is already in jeopardy.

Our common ancestral prototype, the old-fashioned country doctor, also saw 40 to 60 patients a day and yet he demonstrated an instinctive understanding of human frailties that gained for him the enduring respect of the American public. Since his pharmacological specifics were limited, it is apparent that psychotherapy, crude or otherwise, was his most effective tool. Psychiatry in its embryonic struggles has lost touch with this homespun beginning and has left the generalist the difficult task of trying to adapt the psychiatrist's hour-long techniques to a practice that cannot allot such time to a given patient. Improvement in psychotherapeutic techniques that would give better results in shorter time is necessary if psychiatry is going to keep up with the advances that have been made in other fields of medicine. It has been suggested that a solution of this problem would benefit the overworked psychiatrist as much as the overworked generalist.

The spectre of psychiatric fees received

its full measure of criticism by our respondents. Many of those, however, who felt that psychiatric fees were out of line, paradoxically, declined to care for these same patients on economic grounds. Somewhat like the pot calling the kettle black?

The often heard complaint against psychiatric jargon was also raised. The generalist feels that he has important functions that take precedence over learning unneeded phraseology, and that communication between psychiatrists and other doctors could be greatly improved by a more medically oriented terminology with gain rather than loss of professional stature.

In the matter of referrals, there sometimes arises a situation in which the psychiatrist refuses to accept a patient because of finances or a poor prognosis. The generalist compares this unfavorably to his own sense of professional responsibility to hopeless cardiac patients or terminal cancer victims.

We could go on indefinitely, but we will conclude with some quotes from the questionnaires that will leave some food for thought.

No person is all mind or all body. I cannot separate the two. I'm afraid many psychiatrists forget the physical.

I cannot charge these patients commensurate with the time they take. Unlike the psychiatrist, I have a tremendous overhead to pay before I can even break even.

Do not underestimate the general practitioner's ability along these lines.

Psychiatrists should be more human and a friend to their patients. They are afraid their patients will seduce them.

I am less critical of psychiatrists than other specialists because they have more difficult patients to treat.

Many times one of the family comes in to discuss the case. I should be able to help but the psychiatrist has been incommunicado! Ours is a difficult position as the uninformed middle man.

The psychiatrist often fails to check with me regarding the environment and goes on just what the patient tells him. I am familiar with the whole picture and background of the case.

Stop acting aloof, allow yourselves to be seen and let's get acquainted.

SUMMARY

1. Sixty percent of 416 general prac-

tioner respondents felt that their psychiatric training was reasonably adequate. A desire for more presentations and informal discussions of office-type cases was expressed.

2. Generalists are in need of more instruction in counseling techniques.

3. Twenty-four percent of general practice was considered to be primarily psychiatric in nature. The respondents estimated that they could take care of 78% of their psychiatric patients themselves. The main complaint about psychiatric patients was that they take too much time and are often difficult to help.

4. The main difficulties with referring patients to a psychiatrist were the expense

to the patient (72%), resistance on the part of the patient (43%) and lack of available psychiatrists (32%).

5. The main complaints of these generalists about psychiatrists were their lack of availability and the inadequate nature of psychiatric reports to the referring doctor.

6. That progress is being made was indicated by the fact that the younger general practitioners were better satisfied with their psychiatric training, and felt that they could and wished to take care of more of their psychiatric patients as compared to the older practitioners. Some suggestions are made for improving the help that the psychiatrist can give to the generalist in this important area of medical practice.

RESEARCH IN HUMAN SUBJECTS AND THE ARTIFICIAL TRAUMATIC NEUROSIS : WHERE DOES OUR RESPONSIBILITY LIE ?¹

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The authors are engaged in a research project at Duke University³ dealing with isolation and sensory deprivation which uses human subjects selected at random. These subjects evidenced no gross psychopathology. The experiment is, on the surface, a comparatively simple one. Without previous instruction the subject is placed in a small, soundproof, completely darkened chamber for a period of two hours, at the end of which he is interviewed in the chamber to obtain his immediate impressions and reactions. Following this, he is seen outside the chamber by another interviewer, who questions him further on the cues picked up in the initial interview (which is taped). Then the subject fills out a comparatively simple written questionnaire regarding his impression of the experiment. On the day following the experiment he meets with a third interviewer for evaluation of his memory of his reaction to the experiment and also, generally, to determine how he has handled the total experience.

Reviewing our experience with one subject, a seemingly well adjusted, bright young woman obtaining her Ph.D. in psychology, we were confronted with an important problem which deserves considerable discussion and sober thought. A brief description of her progress during and following the experiment will indicate the exact nature of our concern.

It was quite apparent from the initial interview inside the chamber that the subject was experiencing a great deal of anxiety, and as she described it,

"My heart is beating quite fast." She described the feeling of "trying to get some kind of anchor; some kind of bearing," since all of her visual cues were gone. She reported periods of uneasiness, reassuring herself that she didn't have claustrophobia, and a headache which lasted for a short time. It was readily apparent (as is typical for almost all subjects) that she had no idea of the time elapsed despite her intellectual realization that she hadn't been in the chamber very long. When asked for a specific time estimate of her isolation she replied "Oh, hours." Her initial appearance was that of a perplexed, frightened, uncomfortable and anxious person. Her thinking process was quite slowed, and there was a great change in her verbalization and general speech patterns. As the interviewer entered the chamber her first impression was that he looked much larger than his actual size, and it was at this moment that she began to feel anxiety. Also she produced several bizarre fantasies: one about a submarine and another, derived from a science fiction story, about people locked in a room where they were slowly frozen to death. She required roughly an hour and a half to recover her normal intellectual functioning since, as she stated, "I was bewildered."

Following the isolation experience the subject described her feelings as "being shaken up inside." She said that she had a tremendous impulse to find someone she could trust and tell him "all about it." On her arrival home she was very hungry, something quite unusual for her, since she rarely eats at night. She played a few records and fixed something to eat although "it wasn't real hunger, just something to do." Finally, after great difficulty she went to sleep, awaking in the morning to find that the sheets had all been kicked away from the bed.

In the interview the next day she further elaborated some of her isolation fantasies. For example, she had the thought that "Maybe there was only two or three hours' worth of oxygen in the room." She identified herself with sailors in a submarine, a submarine which was obviously in danger. She recalled skipping from one dangerous situation to another and stated that she had concentrated on such situations. One of the dangers was "that the experimenter

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walked into the room, and an enemy closed the door behind him. Of course, there were no locks. He couldn't get out, and the fellow froze to death." At times she had some near paranoid ideas, i.e., thinking that the room was deliberately overheated, that her headache was due to deliberate oxygen deprivation, etc. At one point she became very threatened and thought "Well, I'll play a trick on you. If I go to sleep, you'll get me out." She said she had tried sleeping, and actually it was at this moment that the experiment was interrupted, and an interviewer entered.

At first, "You know I couldn't answer properly. I had a feeling I had nothing to say. I felt slowed down. Then there was that tremendous thumping of my heart." She said that at one point she reviewed her past and present life but had no thoughts about the future. Although she had a lot of love fantasies, she was unable to describe them to the interviewer who had teased her in the past. She thought about the opera "Aida," in which Radames was put into a vault to die. Her reaction to the total isolation experiment was: "There was something fascinating about it. It's not entertaining like going to a movie, but it's something fascinating, it's like having gone through the war. I'll never regret having gone through the war and having had my experiences despite the fact that they were pretty uncomfortable. There is something about it that just fascinates me."

Some time elapsed during which we had no further contact with the subject. However, it was subsequently decided to retest this subject (and others) in order to further evaluate the material under different circumstances. The experiment was repeated exactly as before, except that this time she was told in detail exactly what would happen.

One of the most remarkable effects of this second isolation experience on the subject was:

"I said to myself now I can really get my fantasies going. In other words I didn't start thinking of the present as I did before; this time I tended to wander more towards the past and towards the future, towards trying to solve problems. You know it seemed a lot longer this time, it was much harder for me to stay awake, and I was much less alert."

Later she indicated that she was sure she fell asleep, despite her intention to stay awake and watch her fantasies, and although she had taken a nap earlier to avoid being sleepy dur-

ing the experiment. She also noticed a sort of focus in her thought processes. "Well, they were sort of level, then going up and down, up and down, like a slow wave. This is unlike before when there were lots of things which kept me alert." Further, she essentially described a tremendous amount of passivity and massive demand, which she grudgingly admitted were related to "having to avoid something." The subject indicated that she was quite surprised at her total reaction.

Her previous experiences in the chamber had been so vivid that she assumed that by "letting herself go" they would be even more vivid, yet actually they weren't. Another important factor of the isolation experience was that many of her thoughts were directly concerned with or immediately related to her childhood, particularly of a period of summer vacation. At one time she referred to the underwater submarine scene which she described earlier; note this was associated with a story she read at age 9 or 10 in which a heroic diver died after a very exciting episode.

Throughout the second experiment the subject experienced periods of boredom which puzzled her since they seemed to be completely out of control. Usually associated with the boredom were feelings of wanting to get out and a return to some of her projective thinking, for example, "I thought that the boys were holding me in here longer than they did before," (despite the fact that she had been carefully reassured that she would remain in the chamber only two hours).

She had many feelings of being in a dangerous situation, despite the reassurance that she had been through this before and that "nothing had happened." As this material was elaborated her ninth and tenth years of childhood became most important. During this time she had spent a vacation in the country, following which she had left her home in Europe to come to the United States. Associated with this move was much unhappiness since "I was perfectly happy. I mean I couldn't see why . . . the fact that . . . my friends were doing this. They said the United States was a place where we could live much freer than we were, yet I felt perfectly free."

It is to be noted that this woman was in a period of transition; she was leaving her present position, a very protective training program, to go on her own. This leaving was directly reminiscent by association of leaving her homeland in childhood.

One other interesting incident occurred during the second interview. At one time the subject suddenly felt as if the room were tilted and noticed that her head was tilted, too. Try as she might she could not right herself. Not until she forcefully "straightened" her head with her hands did the room resume its normal position.

In the interview on the day following the experiment the subject greatly elaborated the material reported in the previous interview. She described her experience as "a kind of numbness. In a sense all of my feelings were sort of on even keel." This is a secondary distortion. Despite her massive denial, she did experience moments of anxiety. She said in reply to a question that it was "as if I weren't responding to anything." This statement again exposes her attempted repression and—when this was unsuccessful—massive denial.

She reported an interesting dream in which "people were bunched together, people from my high school days and people that I knew (in her home country) as a little girl, and the people I knew here . . . I was sort of surprised. I thought to myself what on earth are all these people doing here, I haven't seen them for years."

The dream and her subsequent elaborations were associated to her memory of the vacation in the country before she came to the United States. Her feelings about the separation trauma were very much like her feelings about being separated from Duke. She said further about the experience in the chamber "I said I'd come back again. I didn't enjoy the experience but it was so weird; it was fascinating." (We never explained her excessive use of the word "fascination.")

Following this interview it was necessary to have another session because of a very peculiar symptom she developed.

She seemed to have lost sense of direction and was confused whether to take a left or right turn as she was leaving a room. This symptom was clearly related to her tremendous indecision over "where to go," i.e., the separation in the present was, in turn, related to the feelings of separation from her country as a child which had been stirred up by the isolation experiment.

Another subject reported immediately following the experiment that he had directed his thinking during the period of isolation. He said that thinking of specific events made him more comfortable and

that he found these thoughts reassuring since the darkness and silence were disquieting.

The subject, a medical student, mentioned that one of the things he had reviewed was an interview with a young patient the day before, and he implied that thinking of this kept his mind from other thoughts. The initial interviewer believed the subject to be more upset by the experience than he described, but there was no direct evidence thereof. Associations during the interview were only followed in terms of the immediate experimental situation for fear that allowing the subject to associate to past events might either (a) enhance any disorganization which the subject already felt or (b) allow the subject to escape into the past and "forget" the present provocative events. Furthermore it had been decided that extensive exploration should not be attempted during the first interview if the subject appeared to be confused, disoriented or extremely uncomfortable. When the subject was interviewed on the following day, he was considerably more comfortable although he still expressed much embarrassment and discomfort in regard to the previous day's experience. To reassure him the interviewer spoke of the many unusual thoughts subjects had during this experiment and pointed out that sometimes discussing these feelings and ideas allowed the subject to look at them realistically and feel more comfortable about them. At this point the subject remarked that not only had he been thinking about his young male patient, but that there were some sexual connotations. Furthermore, the previous interview conducted in the chamber just after the completion of the experiment was associated with sexual feelings he experienced in regard to the interviewer. He described feeling panic at this time and feeling panic at the previous thoughts about the patient but he had felt unable to report it. Certainly the experience acted as a traumatic event for this subject by bringing to the conscious level latent homosexual feelings and thoughts.

There is some evidence that these feelings have remained conscious. For several days thereafter and indeed, until the present time, this subject is unable to look directly at the interviewer and is apparently embarrassed when they chance to meet.

A female subject requested release from the chamber, and when this was not done rapidly enough, she located the emergency door and walked out of the chamber a

half hour before the official termination of the experiment.

In the interview which followed, the subject stated that she was beginning to feel restless and had had a certain amount of anxiety and fear although she did not consider the experience overwhelming. All of the interviewers noted that the subject's usual vivaciousness was replaced by an affective state which varied from flatness to irritability and petulance. She seemed extremely suspicious, exhibited poor judgment in the things she had expressed and the manner in which she expressed them. When she was first seen, she appeared quite confused and had the appearance of sleepwalking. This state lasted for several days, and a full month passed before she was her usual vivacious self.

During the interview on the following day the subject related that she had always been afraid of darkness and that this was particularly true for the past year since the death of her father; she insists that each night one or two lights be left on in the house, because she and her mother "are alone and some prowler might enter the house." She then described how she had attempted to resist this thought by thinking of pleasant things while she was in isolation. As the thought that someone might be "prowling on the outside" and that he might break into the chamber came closer to awareness, the subject's anxiety and restlessness increased until she had to leave the chamber despite strong inhibitions based on her desire to help and to please the experimenters.

DISCUSSION

It seems reasonably clear that the processing of these subjects in an experiment which was, on the surface, comparatively innocuous, acted as a traumatic event. This result is even more significant in view of the fact that the subjects were carefully chosen as individuals with "strong egos." Although intelligence and education are not necessarily the attributes of a strong ego, these factors plus our knowledge of the subjects had made us reasonably secure in our evaluations of them.

By definition the amount of psychic energy which one's ego is unable to master within a reasonable span of time is designated as a trauma; ordinarily there are protective barriers (i.e., the defenses) against the outcropping of such stimuli, i.e., id impulses. It is also known that there

are numerous instances in which the ability of the defenses erected by the ego to maintain usual or normal functioning is diminished. We believe this to be particularly true in the sensory deprivation experiment we have conducted in which we have introduced a temporary abrogation of usual ego functioning. In other words we deliberately (or artificially) deprive the ego of many of the usual activities and resources which help to keep its defenses intact. In our experiment the paralysis of voluntary motion and withdrawal of many of the usual sensory stimuli which guide the ego produce a strange, potentially dangerous situation for the ego. Under these circumstances, if the protective defense barriers break down, the ego loses its ability to react with purposeful reactions and anxiety, in one form or another will appear. Although the ego opposes the emergence of an id impulse that is equated with some dangerous situation by producing anxiety, it is equally possible, as indicated above, that the ego, unaware, is helpless or temporarily overwhelmed in the face of some conflict and this, in turn, produces anxiety. Thus we believe that the artificial abrogation of ego functioning markedly weakens the ability of the ego to utilize countereathesis so that repressed and conflictual material tend to emerge into consciousness. This is particularly true for those conflicts which might otherwise be handled slowly or more realistically but which can no longer be put off by a paralyzed and weakened ego.

Subsequently it is our feeling that the experiment produced a temporary artificial traumatic neurosis. Although the problems indicated were naturally latent, we believe they would not have emerged with the same intensity in ordinary circumstances.

In view of our experiences, and since it is clear that the trend in psychiatric research is toward the utilization of human beings as experimental subjects, we must ask: 1. What is our responsibility, irrespective of the terms—moral, legal, medical, etc.—used, towards the subjects? 2. How can we best protect subjects from traumatic reactions to an experiment? It is to be noted that our subjects underwent a relatively mild experience (or so it seemed) while

more "dangerous" situations can certainly be conceived. 3. What should be the criteria for the selection of subjects? Can we avoid those subjects who are "sick," or are they an integral part of our research?

It is our belief that, regardless of our research motivations, we have a responsibility to these persons as doctors, as therapists and as fellow human beings and must, in the future, make some provision for helping them with the inevitable traumatic reaction to experiments.

This attitude leads to the question of safeguards during research. Should research grants be extended to include the followup care of subjects in terms of time and money? Would followup care then be considered an essential part of research, or would it broaden the scope of research over and beyond its original purpose? The problem is immeasurably complicated when certain kinds of research (which conceivably could be traumatic) are undertaken by investigators who are not therapy oriented. Ideally, then, provisions must be made to include therapy-oriented person-

nel who may not be directly involved in the experiment in the research grant.

A further important complication occurs when research is done on a patient in therapy. It is extremely difficult to evaluate the effect of concomitant research on therapy; most dynamically-oriented psychotherapists, especially analysts, emphatically state that the introduction of a new artificial parameter not only adds to general resistances, on the part of the patient but can also serve as "a flight away from therapy." For this reason analysts were very reluctant for many years to allow psychophysiological studies to be made on patients in analysis.

CONCLUSION

In conclusion it seems that if we are to continue doing research in clinical psychiatry on human subjects, we *do* have a responsibility to the subjects, to somehow protect them against the possible traumatic effects of an experiment. How this might best be done should not long remain an unanswered question.

PSYCHOTHERAPY OF THE HOSPITALIZED ADOLESCENT¹

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Undertaking the psychotherapy of adolescents always involves opportunities, hazards and challenges unique to this period of development. It requires methods which often differ materially from those used with adults or children, and which may stand in contrast to more usual concepts of treatment.

This paper and previous reports(4, 5, 6) represent some 10 years' experience with more than 300 patients between the ages of 13 and 18. During the past 2½ years, they have been treated on either the adult wards or on the 25-bed adolescent ward of the Neuropsychiatric Institute. Prior to this, all adolescent patients were treated on one of the adult units. The patients could be classified among all the major official diagnostic categories.

This report is concerned only with the inpatient psychotherapy of youngsters whose severe personal and family pathology required their separation from home for a period of hospitalization. As there are no very well-established treatment procedures in this field, the many dramatic adventures and mis-adventures provided by patients of this age have led us to the formulation of some tentative treatment principles.

INITIATION OF TREATMENT—ADMISSION PROBLEMS

Prior to the first outpatient contact, which marks the beginning of hospital treatment, these youngsters have usually found their entire world disrupted by the disintegrating influences of adolescence, by the inroads of illness on mental functioning, and by unsatisfactory family relationships.

Admission to a hospital poses further threats by removing the support gained from familiar, if manifestly intolerable home situations. For these and other rea-

sons, psychiatric hospitalization is associated with more exaggerated fears for adolescents than for any other group of patients. This fear and its concomitant resistance is, in fact, so usual that we have come to regard the presence of an accepting and cooperative attitude towards hospitalization as an ominous sign.

Parents are often even more frightened than their teen-age child by the prospect of his admission. Not only is adolescence a period of emotional upheaval for the youngster, but also a period in which any neurotic or psychotic potential in his parents is maximized as well.

All adults find it hard to react realistically with these attractive, threatening manipulative, anxiety-provoking youngsters. For the parents this may be quite impossible. At first parental anxiety over threatening symptomatology in the patient will often offset their anxiety over having the child hospitalized. At this time parents may be able to nominally "accept" (usually with private reservations, and often even with secret "deals" with the patient) the initial advice for admission. Maintaining the decision for the many months that hospitalization usually requires is quite another matter.

Time and again we have observed sharply rising parental anxiety as the patient improves and abandons the stereotyped modes of behavior for which the parents have a need. In many instances, treatment has been sabotaged after a promising beginning by parents removing the patient prematurely from the hospital.

As a result, we are more and more frequently requiring in selected cases that parents petition the juvenile court to assume temporary custody over the child as a condition of treatment. This supportive use of court authority to supplement intensive case-work treatment of parents may serve to deter, but does not necessarily prevent the parents from signing a child out against medical advice on a neurotically determined impulse. This procedure can

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actually reassure the parents, as well as the patient. The patient may feel more secure in his hospitalization, being relieved of the temptation to test his parents' reliability by pressuring them to remove him.

Although such active medical intervention obviously carries many risks and disadvantages, our own experience has led to the conclusion that any less vigorous approach may be utterly inadequate to the task at hand. From the very first the doctor must "take charge," demonstrating his willingness to invest unlimited time, energy, skill and medical authority to establish the necessary treatment program.

SETTING-METHODS OF THERAPY

The overall hospital environment, with its demanding school and activity programs, realistic social standards, and methods of dealing therapeutically with antisocial behavior, have been described in earlier papers (4, 5, 6).

In this setting, psychotherapy is conducted with infinite flexibility regarding frequency, duration, circumstances and methods of interviewing. A treatment plan is not based on formal diagnostic preconceptions, or the therapist's favorite theoretical orientation, but rather on the doctor's best estimate of the patient's ego resources and deficits at that time, and, of course, on reality circumstances.

The average adolescent is too busy "growing up" to waste energy on many of the therapeutic systems we find most interesting. He cannot afford any *elective* treatment of symptoms or conflicts. The principal subject matter of treatment is not so much psychopathology as "adolescence," with its need for therapeutic promotion of maturation in critical ego capacities.

Psychotherapy proceeds through resolution of emotional crises occurring principally between the patient and his doctor, and also between the patient, his family, other staff adults and fellow patients. Therapy concerns itself with "real things"—school, problems of the day, behavioral difficulties. All these are regularly discussed as the doctor regards every significant daily experience as a part of psychotherapy. Interpretive work with emotionally important experiences of the past is done only in

relation to these current, concrete essential activities.

THE RELATIONSHIP IN PSYCHOTHERAPY

The psychology of the adolescent and his treatment can best be understood in terms of the adolescent-adult relationship, the only framework in which we can study him directly. Although we may be aware of the adolescent's continuing hunger for infantile satisfactions, he cannot acknowledge it openly. This partially accounts for his need to be devious and manipulative in his relationships, particularly with adults. He must maneuver us into supplying his wants without making their exact nature public. The behavioral consequences of this are so very characteristic of the adolescent. They are reflected in his over-determined strivings for "emancipation," his ambivalently belligerent reaction to adults, his inordinate intolerance to any special concessions, or direct expressions of affection or proffered "help," and his highly strategic, disarming use of words and ideas in communicating with others.

In dealing with the necessarily strenuous treatment relationship, it is important to recognize that the doctor's most reliable ally is the patient himself. Beneath the smoke and noise lie the youngster's unconscious ego-ideals, his wish to like, respect and trust others and to receive the same from them, his adaptive ego mechanisms, and the vitally important promise of progressive biological maturation.

It appears that the best way to "build a relationship" with an adolescent is to avoid scrupulously any self-conscious effort to do so. That the therapist must frequently act as a frustrating, depriving disciplinarian always excites concern that such action will prevent the growth of a therapeutic relationship. It is often assumed that a patient's reactive anger to frustration is equivalent to hatred. Therefore, unpleasant but necessary intervention in the life of the patient is commonly undertaken by the therapist with considerable anxiety, and is often regarded as an unfortunate contaminant of the treatment relationship. Actually the disturbed adolescent can initially find great comfort in regarding his therapist as an unreasonable tyrant.

The doctor in neutralizing or remedying external problems which the patient has found too big to handle, and in acting without apology, threat or reluctance to assist his patient in any way necessary with the task of managing his own instincts, actually facilitates the kind of relationship which is prerequisite to any effective psychotherapy.

Insistence upon assuming any valid responsibilities in conducting a patient's treatment is one quality of the therapist's attitude which seems to be recognized regularly and deeply appreciated by the patient through the stormy vicissitudes of therapy. The patient who enjoys this kind of relationship with his therapist can usually successfully weather our inevitable errors of judgment, clumsy and inaccurate interpretations, and his own periods of symptomatic exacerbation.

PROBLEMS IN COMMUNICATION

The problem of communication may also best be approached through attempting an understanding of the inherently troubled relationship between the *adolescent* patient and the *adult* therapist.

We have recognized that the adolescent is in a terrible dilemma. He at times may feel a more intense need to depend upon adults than does a small child, but unlike the latter he cannot afford open acknowledgment of this need. He is compelled to garner surreptitiously cues which will indicate our attitudes toward him and our ability to perceive and supply what he needs.

So, although we meet with the patient for the nominal purpose of exchanging ideas through words, it is seldom that we hear a direct verbal expression from an adolescent in which the important feelings involved correspond to the literal content of his statement.

The importance of mannerisms, bodily attitudes, facial expressions, inflections, intonations, "acting-out" behavior, and other informative activity can hardly be overemphasized. That adolescents seemingly "talk" most directly via behavioral clues is well known. Learning to "read" behavior of the patient is a challenging task, but not nearly so difficult as developing appropriate

curiosity about meanings concealed behind fascinating verbal content which, in spite of ourselves we tend to take literally.

The adolescent's militant use of logical argumentation though partly an effort to assert himself as a power to be reckoned with, frequently seems to serve another purpose in his recurring struggle to come to terms with adults. When important personal issues are in the foreground he can plead his case with formidable logic which even an intelligent adult, who has his feet set off balance by the emotional intensity of the presentation, can find very difficult to assail. Even so, when the therapist is successful in sweeping aside all of the rhetoric with a simple, direct reference to the central issue, he may be amazed to find that his thundering antagonist is obliquely reassured, agreeable, and comfortably compliant.

In such instances it very often seems that he is far more interested in ascertaining his therapist's perceptiveness and capacity for honest expression than he is in winning a battle. An adult can be misled with astonishing ease by such verbal sleight of hand. When this occurs he is reduced to defending his own position with the same arbitrary, oblique sophistries which the adolescent wields with consummate skill. In doing this the adult loses a measure of self-esteem, will be inclined to react with defensive anger or avoidance, and has lost control of the treatment. In the light of such considerations, we find ourselves constantly pre-occupied with the "hidden agenda" seeking to penetrate the camouflage of our patient's logic, his emotional smoke screen, in an effort to (a) understand the essential communication and (b) matter of factly translate this into an idea he can understand without his feeling condemned or belittled.

The disturbed adolescent not only expects this degree of perceptiveness and directness in our approach to him, but he demands it. His uncanny sensitivity to our over-investment in words and ideas provides him with a potent defensive weapon. In his own exaggerated anxiety about treatment, he is ready to capitalize, for a time, on the therapist's often comparable anxiety level to seek a comfortable sanctuary in

intellectual discussion of his inner conflicts. This may lead to a kind of ritual treatment with its apparently rich psychological content and logical interpretations leading to new "insights." Unlike many adult patients, the adolescent usually will not permit us to go on interminably with such intellectually interesting but emotionally irrelevant verbal exchanges. Eventually his frustration and disappointment will become manifest in one way or another. His reactions usually either disrupt treatment or compel a more effective approach to it.

PROBLEMS OF INTERPRETATION

Concerning intensive, individual psychotherapy with adolescents, a few generalizations may be made.

Self-consciously analytical verbal interpretations, even though quite accurate and within the patient's conceptual reach, are subject to a variety of misapplications by him. He may correctly diagnose this approach as a reflection of our exaggerated interest in the treatment process itself, and capitalize upon this in the interest of resistance or secondary gains. Interpretations of defense mechanisms are ordinarily best directed at demonstrating that maladaptive symptoms, or behavior, exist. They do not aim at encouraging the patient to a full revelation of the unconscious conflict against which the defenses have been raised, but at encouraging more effective modes of handling the anxiety resulting from abandonment of old defenses. The adolescent probably has something close to a child's potential for invoking new ways of handling old problems. Great ingenuity is required of the therapist in helping the patient to realize this potential.

Even when the content of an interpretation is truly understood by the patient, it is still usually ineffective in modifying his adjustment. The rebellious, acting-out adolescent may fully agree with our interpretation of his behavior, but it is only when we are successful in reinforcing the words by curbing the behavioral expression itself that he is able to appreciate these words as referring to immediate, proven reality. Eissler has observed⁽²⁾ that while the delinquent is capable of abstraction, only the concrete has emotional meaning

for him. Our experience has shown this to be equally true of all disturbed adolescents and that furthermore it points up an essential principle in their treatment.

A source of effective non-verbal interpretation is in the central attitudes of all staff members toward the patient. He enters treatment with a powerful compulsion to maintain his neurotic equilibrium through established patterned responses, and without adequate regard for altered external conditions. In this socially organized setting (as opposed to an artificially permissive, self-consciously therapeutic atmosphere) he encounters a substantial resistance to his acting-out in accordance with his existing, neurotic conception of reality.

Here, the delinquent boy with swagger, D.A. haircut and long side-burns gets an entirely different reaction than he has been accustomed to having. As the defensive worth of his actions is undermined, he experiences disappointment and anxiety, and is forced to recognize a disparity between his own fantasies about the meaning of his behavior and the emphatically expressed attitude of a new group of adults. In this sense, the milieu is interpretive. Its specific functions in this regard must be actively maintained by the psychotherapist's constant work with the staff.

It should be emphasized that the success of this kind of interpretation is critically dependent upon the patient's ability to regard the staff, and particularly his own doctor, as extremely reliable, consistent and straightforward. We have come to feel that in this work, we must try to approach the patient with a degree of honesty which ideally excludes even the conventional deceptions and duplicities of ordinary adult society.

Very frequently some elliptical, essentially non-verbal communication will be more effective in bringing the patient to one of those painfully real understandings of himself than will careful intellectual dissection. Some things are best left implicit, mutually understood by therapist and patient.

It often becomes quite important to get at the roots of some extremely disturbing problem at a time when the patient is unable to participate in a reasonable discussion, and circumstances—as for example,

bouts of uncontrolled behavior—will not permit temporizing. At such times, the therapist may make a number of intelligent “guesses” about the origins of the acute problem, and present these to the patient *as such*. He offers tentative interpretations about possible meanings and awaits responses which will point the way to further and increasingly fruitful “speculations.”

We frequently talk with the patient about some of the ideas or strivings which are ordinarily unconscious with most adults, but not with the intention of helping him to recover and resolve infantile conflict. Rather, after recognizing that his guardedness results from feelings of guilt and shame over a conscious preoccupation, we refer to it openly only for the purpose of demonstrating to the patient that we are not frightened, horrified or accusatory, as he had anticipated.

The adolescent will obviously experience important transference distortions in the therapeutic relationship. At the same time he is necessarily entertaining a number of very realistic expectations from the *therapist-as-an-adult*, who is furthermore a most important parent-like figure in the patient's current life.

It therefore becomes imperative that when the patient is expressing a particular need in relationship to his doctor, such as a feeling of helplessness, or the inability to make a particular decision, that the doctor judge correctly the degree to which this represents a transference distortion persisting from early childhood situations, and the degree to which it may reflect the patient's realistic appraisal of his own current incapacity.

Generally, that which is transference is dealt with appropriately as such, often with limited interpretations designed to point up anachronistic distortions of reality. On the other hand, those needs of the patient which belong naturally to this age and situation and state of ego functioning must be fulfilled by the therapist, either directly or indirectly.

SUMMARY AND CONCLUSION

Experience in psychotherapy with over 300 hospitalized adolescents is described by brief reference to several important aspects of treatment.

The patient's admission to the hospital is regarded as a critical phase in treatment. Here the doctor first accepts that high level of responsibility for the patient's welfare which must be maintained around-the-clock during hospitalization, and generally continued long after discharge. This is usually required to assure the patient of continued treatment despite powerful opposing forces from within himself, his family and sometimes others. By taking care of his patient's realistic needs, without expectation of immediate personal reward, the therapist incidentally lays the groundwork for the gradual development of a relationship which is in itself therapeutic and which later actually supports verbal psychotherapy in the more conventional sense of the word. The therapist not only may, but must personally exercise needed authority over the patient. He is constantly supported in this by the supervisor of psychotherapy, who is necessarily also the ward administrator.

The therapeutic hospital milieu was carefully developed with the understanding that the ego continues to shape itself against the demands of reality, and that the creation of an artificial freedom from reality is justified only in so far as the patient is genuinely unable to respond to realistic demands with personal benefit. It is recognized that there are levels and kinds of responsibility. Whatever a therapist expects his patient to contribute to his own treatment, by coping with unmodified realities, must be determined by the doctor's own best estimate of his patient's abilities.

Treatment of the adolescent is a highly interpersonal process. Attention to the qualities and vicissitudes of *adolescent-adult relationships* is seen as the best means of understanding the processes of psychotherapy with patients in this age range. This is probably also the most useful framework in which to study the psychology of adolescence generally, as we rarely have an opportunity to observe them directly except in relationship to ourselves. We never see them in the kind of theoretical vacuum which is so often assumed in textbook discussions of them.

In treatment, primary importance is attached to any efforts which foster the

normal maturational processes of adolescence. Psychotherapy, though derived from psychoanalytic psychology, emphasizes measures which favor ego-synthesis without extensive analysis of infantile conflicts.

Some of the universal sources of tension between the adolescent and the adult are mentioned with particular regard to resultant distortions in communication. The recognition of essential verbal and non-verbal communications is discussed as a prerequisite to successful treatment. There are many complex countertransference problems which are characteristic of therapy of adolescents, and which ultimately will require detailed study.

Finally, it is proposed that adolescents, for a variety of reasons peculiar to their age, tend to compel effective treatment. They appear to be much less tolerant of ritualized treatment than adults, and because of their physical size and the strength of their drives, they can convey the magnitude and urgency of their intolerance much more impressively than the child.

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THE RELATIONSHIP OF SCHOOL PHOBIA TO CHILDHOOD DEPRESSION

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During the last few years a fairly consistent psychodynamic pattern accounting for the genesis and development of school phobia and more or less applicable to the individual case has been outlined and detailed by various workers on the North American continent. This paper is concerned with a neglected aspect, namely the importance and frequent occurrence of depressive anxieties in both the affected child and one or both of the parents, an affective disorder which appears to lie behind the presenting symptoms. In reviewing the literature on school phobia only one reference to the frequent occurrence of depression in these cases was found, in a paper on manic-depressive disorders in childhood by J. D. Campbell (1) who points out that a great many children who develop school phobia are really suffering from what he terms an endogenous depression.

REVIEW OF THE LITERATURE

Johnson and her co-workers (5, 6), the first to describe the psychodynamic development of school phobia, pointed out that the basic problem in the child is separation anxiety which may be manifested as an inability to go to school, or as homesickness, or refusal to visit relatives. The relationship between mother and child is described as one of unresolved dependency, characterized by mutual hostility and dating back to the earliest years of childhood. The outbreak of school phobia depends upon some type of marital stress such as infidelity on the part of the husband, financial threat, or severe sickness together with a simultaneous threat to the child's security such as an illness, accident, or a disturbing change at school. It is postulated that these happenings cause an increase in the child's dependency needs which are exploited by the mother in a

vicarious way. In this regressive type of relationship the child's hostility towards the mother is aroused and becomes displaced onto the teacher or some other part of the school situation, leading to phobic avoidance of school, and refusal to separate from mother lest any harm befall her.

A group of 53 cases seen at the Judge Baker Guidance Centre largely confirms this psychodynamic outline (2, 12). The workers there divide the syndrome into two sub-types, those presenting before adolescence who tend to conform to the dynamic pattern described above, and termed neurotic type, and those who present at an older age whose symptom it is felt is but an aspect of a more widespread and insidious disturbance, termed the characterological type. The families are described as being "caught in an oppressive vortex of illness, death and disaster dominated by powerful grandparents and aunts." They feel that the mothers manifest a strong primary affection for the child but have deep fears about their competence as mothers, as a result of which they develop an over-protective attitude towards the child thus promoting a dependent clinging attitude from the child who also makes excessive demands on her. This leads to a vicious circle of repressed hostility, and is the basic relationship leading to separation anxiety. This type of relationship is shown to be a repetition of the mother's relationship with her own mother.

Other authors lay stress upon the sexual problems of these children, upon their castration anxiety and masturbation guilt (7, 10). The transmission of anxiety from parent to child is studied in detail by Eisenberg (3, 4). Many of these authors describe isolated cases in which the parents are depressed, but little emphasis is placed upon this finding (2, 11, 6).

OBSERVATIONS ON SEVEN CASES OF SCHOOL PHOBIA

Seven cases of school phobia presenting at the medical outdoor department of The

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Montreal Children's Hospital have been studied in detail, with investigation of the psychopathology of the family members. The criterion for selection of the cases studied was that the child expressed fear of school or some part of the school situation or showed inability to go to school. The series comprised 3 girls aged 12, 9, and 6 years, and 4 boys aged 9½, 9, 8, and 6 years.

The symptoms shown by the children may be divided into: 1. Openly expressed fear of going to school; 2. Depressive or manic symptoms; 3. Somatic complaints; 4. Other fears and paranoid features. All showed fear of going to school, mainly a diffuse type of fear involving all aspects of school although in one case the fear was at first limited to a particular child who had threatened to "get the patient" some 6 months before the occurrence of the phobia. Depressive symptoms were shown by 6 of the 7 children. The most common, occurring in 6 cases was frequent outbursts of weeping coming on for no apparent reason, in a previously happy child, together with a great deal of unhappy miserable whining behaviour. Three manifested both fear of dying and the wish to die, and one made several suicidal gestures. The remaining case showed little evidence of depression except when talking about his father who had deserted the family, but instead was markedly overcheerful in an inappropriate manner, his mother describing several attacks of hyperactive behaviour in which he tore things up, smashed furniture, and became incoherent, necessitating intramuscular sedation to stop him. These attacks appear to be of the hypomanic variety. Somatic symptoms were described in 5 cases, consisting of stomach cramps occurring before going to school during the weekdays and not at weekends, as well as nausea, vomiting, and headaches. Other fears noted were "fear of the dark," "fear of things under the bed," "fear of ghosts," occurring in 3 of the cases, merging rather indistinctly, since most of these fears were of being attacked, into more paranoid ideas of being kidnapped or having their food poisoned, which occurred in 2 cases.

It is suggested that these children show a syndrome comprising depressive anxiety,

mania, somatic complaints, phobia, and paranoid ideation, similar to Statten's (9) descriptions of cases of homesickness and Campbell's (1) descriptions of milder cases of affective disorders in childhood. This syndrome is close phenomenologically to the depressive disorders of adults.

Considering the psychopathology of the parents, it was found that 6 of the 7 mothers showed signs of overt depression at the time of initial consultation, and continued to show these signs for many weeks. There was, however, a marked tendency to deny these feelings of sadness; in one instance, for example, the mother came to each interview with tear-filled eyes and a depressive facies, but maintained that "she felt just fine." In 3 of these mothers the depression had definitely antedated the child's phobia, from a few days to several months, while in the others the child's symptoms had occurred before the onset of mother's depression. The most common complaints, usually made in response to the question "how do you feel" and made by 5 of these women, were anxiety, feelings of sadness or depression, weeping spells, and various somatic complaints. In several cases the complaints, apart from the fear of school, mirrored the complaints of their children, yet only 2 mothers had sought psychiatric help for themselves before bringing the child for treatment. Five had suffered from more than one depressive episode, and 3 had been depressed following the birth of the affected child, depressions which appeared to be reactive to some domestic event. In the case of the one mother who was not depressed at the first visit to hospital it was discovered that she had suffered a depressive episode lasting several months, a few years previously, and that her husband was being treated for a work phobia, depression, and cancer phobia, again almost the exact symptoms which the child manifested.

Of the fathers in this series, 3 were subject to bouts of alcoholism clearly associated with the onset of depressive feelings, most typically feelings of being worthless and inadequate, together with clear cut depressive affect. One had been hospitalized on several occasions for psychotic depressive episodes. Three others appeared

parents, and child individuals who were not considered for their families, while the severely depressed the family and was not seen for evaluation.

THE DEPRESSIVE CONSTELLATION

From the above observations and from observations made while conducting family interviews there emerges a pattern of family interaction which might be called the depressive constellation. The main features of this constellation are a tendency towards depression in the mother with similar pathology in the child and some pathology or circumstance in the father preventing him from fulfilling the paternal role in an adequate way. This may be depression or some characterological weakness with tendencies towards passivity or occasionally merely the lack of ability to provide enough maternal support for the family. When any stress occurs either from within the family or from outside the brunt tends to fall upon the mother due to the ineptitudes of her husband. At this time there is reactivation of her depressive anxieties. A specific reaction now occurs, a reaction which has often recurred at intervals from the earliest days of the particular child; she tends to develop a close relationship with him, the characteristic feature of which is her tendency towards babying or regression of the child. It is at this point that most commonly the depressive anxieties of the child are aroused. The situation may of course occur in reverse; the child may be the first member of the family to become depressed, again stimulating the regressive relationship and eventually stimulating depression in his mother. Less commonly either of these sequences may involve the father or some other family member such as grandmother with the same outcome. Gross examples of the regressive relationship were encountered in this series of cases, thus one girl had received her nightly bottle until she was 6 years old; another boy of 8 years was still wiped by his mother after going to the toilet. In addition many more subtly expressed examples were discovered.

A characteristic of these parents is their inability to tolerate and resolve depressive feelings and their tendency to avoid and minimize these and other painful affects or

painful reality experienced either by themselves or by other members of their family. When one of their children is faced with some painful feeling or aspect of reality they shield him from it by means of denial and evasion thus preventing him from learning how to cope with such circumstances. An instance of this is the many innocuities that these mothers make to keep their children out of school, usually unconscious innocuities in spite of therapeutic efforts to the contrary, which have been detailed by practically every author on school phobia. Another occurrence in the parent-child relationship is the transmission often by casual comment associated with a massive feeling tone, of depressive rumination from parent to child. Thus the comments of one depressed grandmother who was afraid to leave the house about the number of kidnappers about, was built and elaborated by one child into fantasies about the dangers of the world; he would watch carefully in case he was being followed and so on. In this way the child's sense of reality is again damaged, for his own fantasies are confirmed by those of his parents.

These aspects of the parent-child relationship, namely the regressive relationship, the mutual avoidance of painful feeling and reality, and the transmission of depressive ruminations appear in certain cases to have quite serious consequences for the psychic maturation of the child. In particular, reality testing is damaged and it is postulated that a greater liability to use projective mechanisms, thus developing paranoid states, may occur in later years.

DISCUSSION

Thus far it has been demonstrated that the school phobic child and one or both of his parents exhibit a great many features of the psychopathology of depression. It has also been suggested that the central problem in these individuals is their incapacity to tolerate and resolve depressive feelings, with a resultant return to the use of projective mechanisms leading to paranoid ideation, the development of manic symptoms, or of psychosomatic disorders, and the liability to recurrent depressive episodes. Furthermore there is a recognizable family situation which has been

and the depressive constellation which is to be seen in many other situations than that of school phobia.

It has been indicated by many workers in school phobia that the various pathological patterns of behaviour described can be seen in generation after generation. Talbot writes of the "inbred family constellation" (11) pointing out how frequently these families live in close contact with their own parents and how various problems are seen in grandmother, mother and child. Since it has been demonstrated that the psychopathology of the parents is depressive, it would be reasonable to suppose that the involved children will continue to exhibit the same pathology in their adult lives. It is very possible that there are constitutional factors involved, since it has been shown that there is a constitutional factor in depressive disorders, a predisposition which may be awakened by the family disorder described, producing the depressed infant, child, adolescent, or adult.

A number of hypotheses may now be stated:

1. That the basis of school phobia is depressive anxiety.

2. That there is a typical recognisable family constellation in this disorder which is common to many of the depressive disorders of childhood. (At present many of these disorders are not recognised as depressive in nature).

3. That this syndrome is part of the natural history of the depressive disorders.

The first two propositions can be tested by detailed examination of a larger series of school phobia cases; one of the defects of the present series is the absence of cases in the older age group, which may not conform to the syndrome detailed in this paper. The second proposition can be further tested by collecting a series of families showing the depressive constellation but in which the child presents a different clinical picture. This will enlarge our

knowledge of childhood depression. The third proposition can be tested by follow-up studies, over a long period of time, of cases of school phobia and families showing the depressive constellation, and also by retrospective studies in adults.

SUMMARY

The thesis put forward in this paper is that school phobia is part of the natural history of the depressive disorders, and is but one of the modes of presentation of such disorders in childhood. A family constellation, the depressive constellation, has been described as typical for these cases and it is suspected that this type of family will be found in many of the other modes of presentation of depression in childhood. Suggestions have been made by which the propositions put forward may be checked and expanded.

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THE SIGNIFICANCE OF A DICHOTOMY IN CLINICAL PSYCHIATRIC CLASSIFICATION

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In leading psychiatric circles the usefulness of a dichotomy in clinical psychiatry is generally recognized. As we do not know the real causes for several psychiatric disorders it must be admitted that a differentiation between what we know and what we do not know should be evaluated and used for diagnostic purposes. This is not to say, however, that the dichotomy itself is the actually changing classification of psychiatric disorders.

It has always been the purpose of the international classification to arrange this according to the aetiology of the disorders generally agreed upon. No disagreement exists, I suppose, as to the value of this principle, although there will always be deviating conceptions as to what in this respect has been established. Nor do I think that much disagreement exists as to the aim of basing psychiatric diagnoses as much as possible on scientifically verified aetiological data. At any rate the usefulness of dichotomy for this purpose has been evident in the past. It is sufficient to remember the significance of the dichotomy between organic and non-organic psychiatric disorders, which makes it possible among other things to differentiate clearly between general paresis and neuritis. Another dichotomy of significance in clinical psychiatry was that between genetic and non-genetic disorders. Thus genetic studies have made it possible to group Huntington's chorea and manic-depressive psychoses as predominantly genetically conditioned disorders. It has also made it clear that at any rate some of the disorders diagnosed as schizophrenia are associated with a hereditary predisposition. However, later experiences speak in favour of not labelling these disorders as genetic in contradistinction to non-genetic but as predominantly endogenic as opposed to predominantly non-genetic disorders

(such as the psychogenic, organic, toxic and traumatic disorders). The term "predominantly endogenic" might also be used for the disorders which are predominantly conditioned by exogenous factors. Contradiction is in fact constantly evident in the clinical material of genetic and non-genetic disorders. Contradictions appearing during the first years of childhood in the sense of the interaction between the hereditary disposition and the environmental influences. It should however be noted that the term "predominantly endogenic" does not mean that a disorder has been caused by the environment or by exogenous factors, but that the disorder is predominantly conditioned by exogenous factors. Contradictions will be found directly by Hirschfeld.

The advantage in clinical diagnosis is found in the distinction between the reaction types which are constitutional and non-constitutional. It is not to be understood that the distinction between the reaction types is a contradiction between the predominantly endogenic and non-endogenic disorders. I do not restrict myself to pointing out the importance of a differentiation of these reaction types predominantly caused by exogenous constitutional types in contradistinction to those predominantly caused by exogenous constitutional or by intrapsychic dynamic factors. I shall here only mention that the constitutional types most frequently met with in clinical psychiatry are the compulsive character type, the hysterical, the paranoid, the paranoiac and the sensitive character type. All of these tend to constitute quite special reaction types. These are characterized by an excess of pre-existing character traits and in sharp contrast to the conditions in the conflict neuroses—are not conditioned in special intrapsychic procedures. The significance of a dichotomy between reaction types caused by a constitutional predisposition and those caused by exogenic or intrapsychic factors is to be found in the clinical experience that the constitutional reaction

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types are frequently seen to repeat themselves by rather small exogenic stimuli and that they are only little influenced by psychotherapy. This is the opposite of the conditions in psychogenic disorders in which there is a much better outlook for a definitive cure by psychotherapy.

Here, in relation to the constitutional reaction types we are not dealing with a dichotomy based on verified *aetiological* factors, as was the case with the endogenic psychoses. However, several studies concerned with characterology, and with hereditary traits as well as with habitual offenders point strongly in the direction of a hereditary disposition, even though this—as against the conditions in endogenic psychoses—does not seem to be specific. It is above all the *clinical studies* of the personality types in question and of the course of the reaction types mentioned (as shown by individual follow-up investigations) that have convinced me of the significance of a dichotomy in this field of classification.

In addition to the significance of a dichotomy of diagnostic groups (endogenic, constitutional, organic) I would like also to mention that more and more experienced psychiatrists admit the advantage of operating with a dichotomy within the different groups themselves. As to the groups usually diagnosed as *neuroses*, many psychiatrists, in Europe at least, find a great advantage in differentiating between neuroses and psychopathies. Even if the many heredity investigations (especially from the Munich school, Rüdin a.o.) do not prove the existence of *specific* hereditary constitutions, there is much evidence of typical differences between the groups mentioned. The advantage of differentiating the psychopathic (i.e. constitutional types) from the non-psychopathic (i.e. the psychogenic, and neurotic) types is previously mentioned. Let me at this point focus attention on the significance of a dichotomy within the group of neuroses, even when the psychopaths have been eliminated from it. What is then diagnosed as neuroses might be divided with advantage into 2 groups, viz.: the group of real psychoneuroses, characterized by intrapsychic conflicts, and all the other types of neuroses in which

many aetiological factors may be considered (neurasthenia, vegetative neuroses, some psychosomatic disorders etc.). The significance of such a dichotomy lies in the first place in the fact that it is predominantly in the group of the real conflict-neuroses that a therapy based on deep psychology is indicated.

From clinical points of view also there is reason to make differentiations within some of the constitutional reaction types. Thus a differentiation between paranoiac and paranoid reaction types may be of significance especially in the prognostic aspect. (The paranoiac reaction types correspond mostly to the states previously described as paranoia, while the paranoid reaction types are met with in almost all psychiatric disorders). The author has also been much concerned with the significance of a differentiation between the typical compulsive character type (corresponding to Freuds' anal erotic type) and all the other compulsive neuroses. The compulsive character type is, among other things, very little influenced by therapy, while in the usual compulsive neuroses the chance of cure is much better. Similar experiences are met with as to the difference between the typical hysterical character types and usual hysterical reaction types more psychogenically conditioned.

Let me as a last point repeat what I have been advocating for more than 20 years, viz. the dichotomy of the term schizophrenia. Based on the fact, stated primarily by Meduna, that there was a significance difference in symptomatology of cases cured by cardiazol treatment and those not cured, although both categories were diagnosed as schizophrenia, I proposed in 1937(2) to differentiate between the real schizophrenias, as a rule with a poor prognosis, and all the others which I proposed to diagnose as schizophreniform psychoses. Little by little as the symptoms of the real schizophrenia group became the object of more detailed studies and as it came out in different statistics that in fact there was a correlation between special symptoms in the initial states and the outcome after different treatments, the interest in a dichotomy became greater. Here I shall only point out the fact that Bellak(3),

is a result of his comprehensive study of the different conceptions on the problem, proposed a dichotomy between the central group of schizophrenias, which he proposed should be given the name *dementia praecox*, and all the others which he proposed should be diagnosed as schizophrenia. Rümke (4) also has contributed many well reasoned studies to the question and is much interested in a dichotomy. At the 2nd International Congress of Psychiatry in Zürich 1957, several speakers were in favour of a dichotomy between schizophrenia and schizophreniform disorders. It is of great interest that also H. Ey (5) on the basis of individual follow-up investigations has arrived at very similar conclusions. Ey differentiates between 5 forms of schizophrenia. The two first forms (the severe forms (Kraepelin types) and the medium forms (Bleuler type with chronic autistic disintegration and typical defect) are as Ey writes, "in effect the cases which, I think, all psychiatrists would be unanimous in designating as "true schizophrenias." They also correspond strictly to what I call process-schizophrenias, which in accordance with the results of Ey, I also have found regularly, to run an unfavourable course. The 3 other types of Ey (delusional marginal forms, without marked disintegration, marginal schizoneurotic forms (pseudoschizophrenic neuroses) and acute or cyclic forms) correspond fairly well to what I have proposed to call schizophreniform psychoses. So Ey's investigations, which like those from the University Psychiatric Clinic of Oslo, are based on individual followup investigations, strongly support the claim for a dichotomy of the schizophrenia group. Such a dichotomy is the only way in which international comparative psychiatry in this field can be of real, scientific value. The dichotomy is also of great significance in teaching students the prognosis and treatment of the different subgroups of schizophrenia.

SUMMARY

I wish to stress the fact that it has always been the differentiation of aetio-logically different psychiatric syndromes, that has made useful psychiatric classification possible by providing clear descriptions of inherent characteristics. However, as there are several psychiatric disorders the causes of which are still unknown clinical experience calls urgently for a classification of psychiatric groups that have several common traits in respect to symptomatology, course and treatment. Such a systematization might be of great significance to research into prognostication and treatment of the individual case. As team work from our clinic (6) has shown, it is possible even in the initial stage of a case of schizophrenia to predict the course with a certainty of more than 90%. In addition it is also possible in the initial stage to indicate which of the modern treatments has the best chance of success. Consequently if the significance of the dichotomy in psychiatry were generally accepted it would probably mean a great advantage in international comparative psychiatry.

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THE OUTCOME OF SCHOOL PHOBIA : A FOLLOW-UP STUDY BASED ON 41 CASES ¹

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This paper will describe the academic and social adjustment of 41 children with school phobia at a mean (and median) interval of 3 years following their initial clinic contact. The results on this group, to our knowledge the largest reported with this long a followup, are presented in validation of a therapeutic method which emphasizes prompt return of the child to school as the key to successful treatment.

REVIEW OF THE LITERATURE

School phobia may be defined phenomenologically as partial or total inability to go to school that, on the surface, seems to result from dread of some aspect of the school situation. It is accompanied by the signs and symptoms of anxiety when school attendance is imminent. Physiologic manifestations may be the most prominent features and may take the form of anorexia, nausea, syncope, malaise or even recurrent low grade fever. The overt expression of fear of school may be totally lacking but may be inferred from the correlation of symptoms with school days and their absence on weekends and holidays. If the child is able to put his fear into words, he may ascribe it to a particular teacher, his classmates or the dread of failing. But changes of class, course or school are strikingly ineffective in altering the syndrome.

As Johnson and her coworkers(1) were the first to suggest, the basic difficulty is not in going to school, but rather in leaving home; that is, anxiety about separation from the family. In a report to the 113th annual meeting of this Association, one of

the authors of this paper(2) described observations of children with school phobia and their mothers, which provided further validation for this hypothesis. It was evident that the separation problem was bilateral; the involved parent (usually the mother) initiated and reciprocated the child's anxiety. Observation of the child's symptoms *in statu nascendi* revealed that they were a response to the contradictory verbal and behavioral cues provided by his parents. This resulted in a direct communication of anxiety between the principal actors in the family drama. As a therapeutic corollary to this theory of symptom genesis, it was suggested that the treatment program should be centered about firm insistence on early return to school.

This represents a rather sharp deviation from traditional methods of treatment which tend to emphasize insight before action. There appear at present to be two major trends in the treatment of school phobia. Certain workers(1, 3-6) stress the desirability of removing pressure for attendance, then a period of working through of dynamic issues, to be followed by a planned return when the child is "ready." Others (2, 7-11) emphasize the importance of an insistence upon early return to school, after an initial psychiatric evaluation, to be followed by concurrent therapy while the child continues to attend. We have not hesitated to invoke the legal authority of the school to compel attendance when no real movement toward return to school was evident on the part of the family.

In objection to the latter point of view, it has been argued that recurrence or substitution of symptoms may occur, in view of the obvious diminution in the motivation for prolonged treatment once return to school has been accomplished, with the consequent likelihood of premature termination of clinic visits. It was therefore of interest to examine the outcome of the cases that had been treated by this method.

¹ Read at the annual meeting of The American Psychiatric Association, Philadelphia, Pa., April 27-May 1, 1959.

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Our search of the literature has revealed only two large series of cases followed for appreciable periods after the termination of treatment. Waldfogel and his coworkers (8) followed a group of 36 patients for a period of 6 to 18 months. Twenty of these children were treated briefly with an emphasis similar to our own in a school setting. Eighteen continued to attend without recurrence of symptoms and two had but brief flurries of anxiety. The authors found no evidence of symptom displacement. This outcome was contrasted with 11 cases, in 7 of which treatment was refused by parents, and in 4 of which treatment was unavailable. Of these 11, only 3 had been able to resume full attendance. Glaser (11), in a report of 38 cases treated with an emphasis on early return to school, noted that 36 were in regular attendance, of whom only 3 had major persisting psychiatric symptoms, after a followup period of 1 to 2 years.

CLINICAL MATERIAL

The cases studied in the present investigation include all of the children with school phobia seen at the Children's Psychiatric Service between 1952 and 1957, 41 in all.⁴

Of this group, 14 were girls and 27 boys. In other reports (4, 7), girls have been as common as, if not more common than, boys (8). It is of interest to note the I.Q. distribution (Table 1).

TABLE 1
I. Q. DISTRIBUTION IN 41 CASES
OF SCHOOL PHOBIA

85-89	3
90-99	5
100-109	13
110-119	7
120-129	10
over 130	3
Total	41

These children with school phobia were above average in academic capability as a group. Not one patient tested below the dull normal range and half fell into the

bright to superior levels of intelligence.

Table 2 lists the age distribution of the patients.

TABLE 2
AGE DISTRIBUTION OF 41 CASES
OF SCHOOL PHOBIA

Age Range	Number of Cases
5-7	9
8-10	15
11-13	11
Total	41

Twenty-seven of the patients were 5 to 10 years of age; 14 were 11 to 13. We call attention to this age distribution as an important factor in outcome, an observation previously noted (7, 8).

The predominant short term emphasis of the treatment program is evident from Table 3.

TABLE 3
DISTRIBUTION OF 41 CASES OF SCHOOL PHOBIA
BY AMOUNT OF TREATMENT RECEIVED

Clinic Visits	Number of Cases
5 or less	18
6 to 12	14
13 or more	9
Total	41

Three quarters of the cases were in treatment for less than 4 months; only one-sixth were treated for as long as 6 months.

METHOD OF STUDY

The 41 cases upon which this report is based constitute the total population of children with school phobia seen at our clinic from 1952 through 1957. An effort was made to establish contact with the family and the school of each child. By telephone and mail inquiry, information was sought on the attendance record, school achievement and social adjustment of each patient. Information was obtained from both sources in about 90% of the cases, but from at least one source for all cases. In the 5 cases in which the family had moved out of state, the followup period is listed as of the last information available to us. It should be noted that the children themselves were not reexamined. Our data are based upon family and school reports and

⁴ Ten of these cases were included in a previous study (7); 31 have never before been reported.

must be reviewed with this limitation upon their completeness in mind.

The duration of the followup period is presented in Table 4.

TABLE 4
DURATION OF FOLLOW-UP IN 41 CASES
OF SCHOOL PHOBIA

<i>Period</i>	<i>Number of Cases</i>
15-23 months	12
24-35 months	9
36-47 months	9
48-80 months	11
	—
Total	41
(Mean duration equals 3 years)	

No case was followed for less than 15 months; three quarters were reevaluated after at least 2 years and half after at least 3 years.

RESULTS

Let us focus, to begin with, upon the record of school attendance, which we consider the primary measure of success. Outcome was considered successful only if the child was attending school regularly. By this criterion, 29 (71%) of the 41 cases were successful.

When outcome was examined separately for boys and girls, we found that 93% of the 14 girls but only 60% of the 27 boys were "successes." However, the apparent sex differential seemed largely ascribable to the age distribution of the boys and girls rather than to the sex of the patients.

When the cases were divided into two

groups, less than 11 years of age and 11 and older, a marked differential in outcome appeared. Of the 27 children younger than 11, 89% had a successful outcome; indeed, two of the three failures represented, not a lack of response to an adequate trial of treatment, but the result of injudicious medical management. It is noteworthy that once the child had attended school regularly for as long as a month, further problems in attendance arose in only two. In contrast with this excellent record, only 36% of the 14 children 11 or older were able to return to school.

When this age criterion was applied to the boys and girls separately, it accounted for the major part of the apparent sex differential, as is evident in Table 5.

Having established the patterns of school attendance, we then addressed ourselves to the over-all adjustment of the youngsters who were attending school regularly. Was it possible that other major functional disorders had been substituted for the school phobia? On the basis of the replies from schools and families, we can state that 23 of the 29 successful cases were reported to be making satisfactory academic and social progress at an average interval of 3 years after the onset of their treatment experience. The problems described in the remaining 6 patients centered about aggressive behavior disorders in 3 and academic failure in 3 (of whom 2 had I.Q.'s less than 90). It should be noted that our followup method is likely to have registered

TABLE 5
OUTCOME OF 41 CASES OF SCHOOL PHOBIA
CLASSIFIED BY AGE AND SEX

<i>Age & Sex</i>	<i>Outcome</i>		<i>Total</i>
	<i>Success</i>	<i>Failure</i>	
Less than 11 years			
Boys	13	2	15
Girls	11	1	12
Subtotal	24	3	27
11 Years or older			
Boys	3	9	12
Girls	2	0	2
Subtotal	5	9	14
Total	29	12	41

the presence of major maladjustments only. It seems significant, nonetheless, that functional impairment from phobic or anxious behavior was not described in any of the 29 successful cases.

We attempted to identify the major factors in the therapeutic failure of the 12 children who did not return to school. Although a number of issues were involved in every case, Table 6 represents an effort to assign a primary cause for the poor outcome in each.

TABLE 6	
PRIMARY FACTORS IN THE POOR OUTCOME IN 12 CASES OF SCHOOL PHOBIA	
<i>Factor</i>	<i>Number of Cases</i>
Schizophrenia	3
Family Decompensation	4
Inadequate Treatment	3
Medical Mismanagement	2
	12

As a group, these patients were more disturbed than those who had been able to resume school attendance; 3, and possibly 4, were ambulatory schizophrenics as contrasted with none in the successful group. They came from seriously disturbed families; 4 had a psychotic parent in the home and 3 a totally inadequate father. Five of the families were characterized by neurotic interaction, not too dissimilar from the successful group, but 7 fell into the so-called multiple-problem family category. Efforts by our clinic, the schools, and other social agencies were unavailing in the search for a point at which therapeutic leverage could be applied in these families.

However, in 2 of the 5 neurotic families in which we believe a successful outcome might have been achieved, the parents broke off clinic contacts and obtained physicians' statements that the children were "too nervous" to attend school and required home teaching. Once this new family equilibrium had been established, the parents were able to utilize the medical certificates to defeat all efforts of the school authorities to require attendance. In 3 cases, it is our impression that the poor outcome resulted from a failure to establish satisfactory liaison between the clinic and the school. For a variety of reasons in each

case, the patient failed to receive sustained attention. As we reappraised the total record, it was evident that no consistent program had been carried out and that the patient and family had not had the benefit of an adequate trial of treatment.

DISCUSSION

This series of cases confirms the observation previously reported on the basis of a smaller group(7) that the prognosis is much graver for the older child with school phobia. It is a well recognized principle in child psychiatry that the significance of a particular symptom varies according to the age of the patient(12). What may be physiologic at an early age, and of dubious meaning at an intermediate period, is indicative of pathology at a later age; consider, for example, enuresis, thumb-sucking, belief in fantasy(13), and so on. In similar fashion, separation problems, while evidence of inadequately resolved family issues in the child of 6 or 7, do not portend the same degree of illness as they do in the child of 11 or 12. This is confirmed by the finding of much more serious pathology in the older children with school phobia and in their families, than was evident in the younger group. We are convinced that our efforts would have been successful in all but one of the 27 children under 11, had not misguided medical intervention by other physicians removed 2 of the cases from further treatment. On the other hand, even if we suppose that the 3 cases, whose failure we ascribe to inadequate treatment, had been given proper care and had responded to it, the salvage rate in the 14 cases older than 10 would not have exceeded 50%.

It seems clear that school phobia is not a disease entity but a symptom complex; it may be a manifestation of a situational reaction at one end of the spectrum and of a severely neurotic or even psychotic pattern at the other. This points to the importance of an adequate diagnostic evaluation as the first step in treatment. Only on the basis of such a study can an appropriate treatment plan be formulated. The therapeutic program requires close collaboration between school and clinic(7).

In our early experience with school

phobia, we were somewhat hesitant to apply pressure for prompt return to school. It became clear that we were sharing and indeed reinforcing family anxieties by our hesitance. As the feared untoward reactions failed to occur, we became increasingly aware of the considerable therapeutic value of the insistence on early return itself. To begin with, it brings into sharp focus the primary issue of separation and dissociates the therapist from the family's displacement on to fantasied dangers in the school situation. Secondly, it emphasizes our recognition of the core of health in the child; the fact that we *act* upon this premise constitutes effective reassurance to a panic-stricken family. A deemphasis on school attendance and a plan for prolonged therapy tend to signify to the family that the physician, too, is uncertain and regards the child as being as sick as they do, despite verbal formulations to the contrary. Finally, the return to school restores the child to a growth-promoting environment and removes him from his immersion in the cycle of mutually reinforced anxieties in the home.

All who have worked with cases of school phobia agree on the importance of prompt intervention. We disregard the waiting list in assigning intake appointments to such referrals on a semi-emergency basis. The longer the absence from school, the more entrenched become the original anxieties and the greater the strength of secondary fears about missed school work, the reaction of classmates, and so on. However, in reviewing our cases, we were not able to demonstrate a correlation between the duration of the school phobia and the ultimate outcome. We were gratified to find a number of cases out of school for as long as 3 to 6 months who were successfully returned. The unsuccessful cases, however, presented a considerably longer history of emotional maladjustment before they were brought to treatment.

SUMMARY

A clinical study of 41 cases of school phobia confirmed the hypothesis that this

syndrome is a variant of separation anxiety; the basic issue proved to be leaving home, not going to school. The outcome of these cases after a mean period of 3 years confirmed the utility of a treatment program of brief psychotherapy centered about prompt return to school. Therapeutic success was shown to vary inversely with the age of the child and the severity of his psychopathology.

School phobia constitutes a symptom complex which may be a manifestation of a readily reversible situational reaction or of a severely neurotic or even psychotic adjustment. Effective treatment should be based on a careful diagnostic formulation. But, with the sole exception of the overtly psychotic child, the central focus of the treatment program for all cases should be placed upon firm insistence on early return to school, reinforced by appropriate sanctions of authority.

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CLINICAL NOTES

SPINAL FLUID CHANGES IN PATIENTS TREATED WITH ATARACTIC DRUGS

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The powerful behavioral changes induced by ataractic drugs are well known. The physical correlate, however, still appears to be obscure. EEG changes have been reported; and recently, Smith(1) called attention to the fact that drug-induced Parkinsonism may be accompanied by increase in spinal fluid protein. On the other hand, Bruetsch(2) reported increased protein in schizophrenic patients not receiving any drugs.

METHOD

Twenty-five patients (mainly schizophrenics) were chosen at random from those receiving either chlorpromazine or trifluorpromazine, and cerebrospinal fluid was obtained by lumbar puncture. None of these patients had ever had a positive serology in blood or spinal fluid or any detectable neurologic disease. Twenty-five mental patients not receiving any ataractic medication and without apparent neurologic disease served as controls. In those patients who had abnormal spinal fluid changes, a second specimen was obtained one week after discontinuation of drug therapy, and, if possible, a third test was done 3 weeks after the medication was stopped. Also the relationship of these findings to the incidence of Parkinsonism was investigated.

RESULTS

There was no essential difference between the findings in the patients on ataractic therapy and the control group. In the ataractic therapy group, 6 patients

had increased protein* (above 45 mg.) and the mean protein value of the whole group was 44.8 mg. In the control group on the other hand, 8 patients had increased protein with a mean value of 37.2 mg. Abnormal gold curves were found in 5 cases of the ataractic therapy group and in 6 cases of the control group. Repeat spinal fluid examinations after patients were taken off medication revealed no positive correlation between the observed changes and the drug withdrawal. Cell counts were normal in all 50 patients. The incidence of Parkinsonism did not appear to be related to the abnormal spinal fluid findings as only one patient had symptoms of Parkinsonism of that group.

SUMMARY

In a series of 25 patients on ataractic therapy and 25 other mental patients as controls, there was no essential difference in the incidence of increased protein or abnormal gold curves. The high incidence of abnormal findings in both of these groups, however, points to the possibility that these abnormal findings are unspecific and may also be found to a certain extent within the general healthy population. This study does not support the assumption that increased spinal fluid protein and abnormal gold curves are the result of ataractic therapy.

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*Determination of protein and gold curves were made without knowledge of this study in the State Laboratory of Hygiene, Madison, Wis.

¹Medical Staff, Dept. 01 Troy Drive, Madison.

²These patients were followed during the last 10 years.

A NEW QUANTITATIVE SERUM BROMIDE DETERMINATION

GEORGE H. REYE, M.D.¹

Following the development of the qualitative urine bromide test(1) reported from Northern State Hospital in the American Journal of Psychiatry of August 1959, it was decided to attempt a quantitative serum determination. Preliminary investigation demonstrated it to be both simple and feasible.² The determination is dependent upon the oxidation of the bromide ion to free bromine and the intensity of bromine's inherent color is measured spectrophotoelectrically. Chemically the reaction is: $\text{NaBrO}_3 + 6\text{HCl} \rightarrow 3\text{Br}_2 + 3\text{H}_2\text{O} + 6\text{NaCl}$.

This procedure can be routinely performed by the average clinical laboratory and has the merit of following Beer's Law from a serum equivalent bromide concentration of 25 mg.% through 1000 mg.%.

The routine serum bromide determination as used by most clinical laboratories is that of Wuth(2) which follows Beer's Law to about 220 mg.%. Modifications of this test in order to read higher serum levels are inaccurate and according to Dr. Compton(3), the Wuth method is "wholly unreliable for values over 300 mg.%" In our laboratory modifications of the Wuth determination necessary to read known bromide concentrations, equivalent to serum levels of 500 to 1000 mg.%, has resulted in errors of the magnitude of 200 mg.%.

Reports of case histories with serum bromide levels well over 1000 mg.% as determined by a modified Wuth method continue to appear in current literature, despite authoritative opinion(3) that such levels are incompatible with life.

MATERIALS AND METHODS

Reagents:

1. 10% trichloroacetic acid: Ten grams of trichloroacetic acid are dissolved in 100 ml. of distilled water.

¹ Director of Research, Northern State Hospital, Sedro Woolley, Wash.

² The author wishes to express his appreciation to Dr. C. H. Jones, Superintendent, and Dr. J. Joffe, Chief of Medicine, for making this study possible and for their suggestions and criticisms. The technical assistance of David Higgins and William Robinson is gratefully acknowledged.

2. 5% sodium or potassium bromate: 5 grams of the bromate are dissolved in 100 ml. of distilled water.

Procedure:

1. A protein free filtrate is prepared by mixing 1 ml. of serum and 9 ml. of 10% trichloroacetic acid and then filtering through No. 42 Whatman filter paper.
2. 5 ml. of the clear filtrate is pipetted into a photometer cuvette which will represent the unknown, and 5 ml. of 10% trichloroacetic acid is pipetted into another cuvette which will represent the reagent blank.
3. To both cuvettes, 1 ml. of 5% KBrO_3 is added and the contents mixed.
4. Several drops of mineral oil then are added immediately to the unknown cuvette without agitation to prevent loss of bromine vapor which would result in low readings.
5. Read in the spectrophotometer at 445 mμ with the reagent blank set at 100% transmittance.
6. The unknown is read as % transmission at 5 minutes after the addition of the bromate. The concentration of bromide in mg.% is then read directly from a semi-log graph or from a direct reading table abstracted from the graph and the results reported as sodium bromide.

CALIBRATION CURVE

All of the calibrations were performed on a Coleman Junior Spectrophotometer, model 6A and 19 mm. cuvettes were used throughout. A Leitz or other similar photometer possessing a 445 mμ filter could be similarly calibrated.

Standards were prepared as follows and are reproduced here in order to enable others to easily calibrate their own curve on semi-log paper. Working Standard (W.S.)—100 mg.% NaBr.

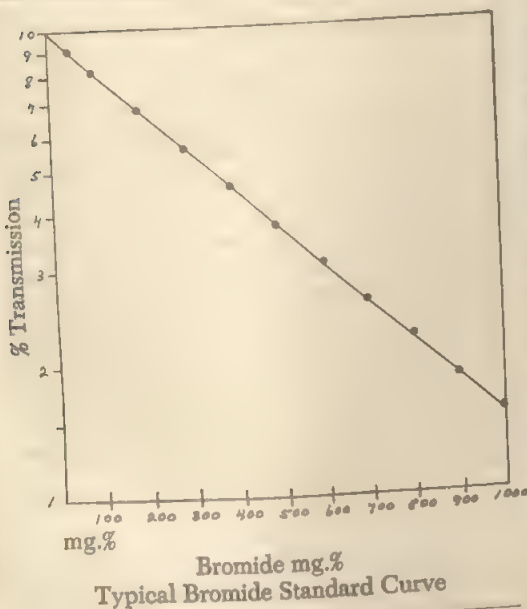
The procedure for each of the above reference standards is then exactly the same as previously outlined under procedure No. 3-6, the standard being treated as the unknown.

A semi-log graph wherein % transmission is plotted against mg.% of sodium bromide is herein reproduced. Known concentrations from 50 mg.% through 1000 mg.%, similarly diluted as in serum, were used. To be noted is the correlation with Beer's Law from 90% transmission through 16% transmission.

1959]

100 mg. of NaBr is dissolved in 100 ml. of 10% trichloroacetic acid.

To	.25	ml. of W.S.	add	4.75	ml. of 10% trichloroacetic acid	=	50 mg.%
	.5	"	"	4.5	"	"	100 mg.%
	1.0	"	"	4.0	"	"	200 mg.%
	1.5	"	"	3.5	"	"	300 mg.%
	2.0	"	"	3.0	"	"	400 mg.%
	2.5	"	"	2.5	"	"	500 mg.%
	3.0	"	"	2.0	"	"	600 mg.%
	3.5	"	"	1.5	"	"	700 mg.%
	4.0	"	"	1.0	"	"	800 mg.%
	4.5	"	"	.5	"	"	900 mg.%
	5.0	"	"	.0	"	"	1000 mg.%



with the bromate reagent to liberate iodine. Serum equivalent concentrations of iodide, from 50 mg.% to 600 mg.%, were tested with the bromate reagent and iodine was liberated. Although the color of iodine in these concentrations duplicated that of bromine, iodine is spontaneously oxidized within 2 to 3 minutes to the colorless iodate state. This oxidation is effected by the bromate reagent.

SUMMARY

The new quantitative serum bromide determination described is dependent upon oxidation of the bromide ion to free bromine and follows Beer's Law from a serum equivalent bromide concentration of 25 mg.% through 100 mg.%.

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SPECIFICITY AND INTERFERING SUBSTANCES

Pooled sera as well as sera of patients on a variety of medications were tested and no false positives have been found to date. It was postulated that iodides could react

WHAT HAPPENS TO RETURNED TRANQUILIZING DRUG PATIENTS ? AN ANALYSIS OF MULTIPLE DISCHARGES

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At Elgin Illinois State Hospital, a chlorpromazine project is presently in its fifth

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year. Only female patients who had been incontinent, destructive, combative and who frequently disrobed were included. By February 23, 1959, exactly 4 years after the project had begun, 822 patients had

been treated. Their average age was 41, their average hospitalization 8 years. Of this number, 258 had been discharged during the 4 years and remained on chlorpromazine and reported at 3-week intervals to a special drug clinic at the hospital. For further details of the project and the functioning of the drug clinic see previous reports (1, 2, 3, 4, 5, 6).

Of the 258 discharged, 101 patients were returned to the hospital during the 4-year period. It is this group that is of special interest in this report.

Forty-two of the 101 returnees were discharged a second time, but 18 of these 42 returned once more. Six of these 18 were discharged for a third time, and they returned again. Thus, at the end of the 4-year period, 24 patients of the 101 returnees were outside the hospital after having returned and having been redischarged. Hence 77 patients of the original 258 discharged were back in the institution at the end of 4 years.

The reasons for return of the 42 patients, once or several times, as the case may be, were as follows: (a) Relapsed in spite of taking drug regularly, 24; (b) uncooperative as to taking drug, 9; (c) placebo relapse,² 1; (d) irregular clinic attendance, 4; (e) family unwilling or unable to keep patient, although no relapse occurred, 3; (f) patient herself desired to return, 1.

The average length of time away from the institution during the first discharge of these 42, was 8 months, but the 18 discharged a second time merely stayed away for an average of 5 months. The 6 who were discharged a third time returned after having been away only for a 3 months average.

Dosages of chlorpromazine during the discharge period ranged from 200 to 600 mgs. a day. After return, drug dosages were adjusted to the needs of the patient. Where

² A placebo study is being conducted parallel with other investigations on our discharged outpatients, 72 patients being involved in this group (2, 3, 4)

this did not apply, other facets of the overall treatment plan, or undetermined factors helped to bring about again clinical improvement to warrant discharge once more. As a rule, patients who relapsed due to an insufficient dosage of the drug responded within one or two weeks to an increased dosage (up to 800 mgs. a day orally).

The 42 patients who had returned and were discharged a second time, spent an average of 8 months with us between return and second discharge, while the 6 who were discharged a third time stayed in the institution before the third discharge an average of 6 months.

SUMMARY

A note of optimism is indicated regarding the future of hospital-turned tranquilizing drug patients. At the close of 4 years of an extended chlorpromazine study on once extremely disturbed mental patients, 24 of 101 returned patients were once more outside the institution. Some of these had been discharged and returned two or three times. These 24 amount to 23.7% of the total returnees. Returned tranquilizing drug patients must, therefore, not become "forgotten people," but deserve further interest and consideration.

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TEST FOR PHENOTHIAZINE —PIPERAZINE DRUGS

(Compazine, Trilafon and Analogous Compounds)

Mix 1 ml. urine with 1 ml. 10% trichloroacetic acid.

Add 1 ml. 1/1000 molar mercuric nitrate reagent.

(343 mg. $\text{Hg}(\text{NO}_3)_2 \cdot \text{H}_2\text{O}$ in 1000 ml. conc. HCl)

Read against color chart within 30 seconds.

Daily Drug Dose:

10-30 mg.

30-70 mg.

70-120 mg.

125 mg. & over



+

++

+++

++++

A RAPID, SEMI-QUANTITATIVE URINE COLOR TEST FOR PIPERAZINE-LINKED PHENOTHIAZINE DRUGS (COMPazine, TRILAFON AND ANALOGUOUS COMPOUNDS)

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AARON S. MASON, M.D.¹

Tests and reagents for phenothiazine compounds in urine and their significance in psychiatric practice were previously reported by us(1-4). The test solutions described for the detection of all urinary phenothiazine compounds in small amounts (3) and for Vesprin (triflupromazine)(4) will also reveal the presence of phenothiazine drugs coupled to a piperazine ring. However, the color development with these reagents is not sufficiently intense or gradient to permit the development of a color chart for simple and instantaneous semi-quantitative readings. Moreover, reports of side effects and toxicity in general medical and pediatric journals(5-13) seem to indicate the need for a specific and reliable test for the piperazine-linked phenothiazine compounds, especially for prochlorperazine (Compazine),^{2, 3} and perphenazine (Trilafon). The following test was devised to meet this specific requirement:

A 1/1000 molar solution of mercuric nitrate in concentrated hydrochloric acid (343 mg. $\text{Hg}(\text{NO}_3)_2 \cdot \text{H}_2\text{O}$ in 1000 ml. conc. HCl) was found to be a suitable test reagent for this class of drugs. It yields a scale of color reactions ranging from pale pink via more intense shades of pink to

light violet and finally more intense violet, for drug doses of 10 to 125 mg. per day. The reaction is extremely sensitive and is produced by a fraction of a microgram of intermediary drug metabolite contained in 1 ml. of urine, after drug doses below 100 mg. per day.

The test is performed by mixing 1 ml. of urine with 1 ml. 10% trichloroacetic acid, shaking gently, and then adding 1 ml. of the mercuric nitrate reagent to the mixture. The resulting color complexes are of limited stability, especially in the lower drug doses, and should be read against the color chart, graded from (+) to (+++), within 30 seconds. The pale pink (+) level of the color chart represents average daily drug dosage of 10 to 30 mg., the pink (++) level dosage of 30 to 70 mg., the light violet (+++)—70 to 120 mg., and the more intense violet (++++) level —120 mg. and over. (See color chart.)

The individual levels constitute average reactions compiled on the basis of approximately 500 determinations per drug and dosage level, obtained from approximately 300 different patients. A total of well over 3000 urine specimens containing Compazine or Trilafon were tested. These two drugs give the same color reactions. Limited tests with Dartal (thiopropazate), which has a very similar chemical structure, yielded the same color reactions as described above. However, representative numbers of patients on Dartal have not as yet been investigated.

Triflupromazine (Stelazine) usually prescribed in daily dosage of 6 to 40 mg. per day, conforms to the lower color intensities (+) and (++) of the color chart. However, from 3 to 6 weeks after institution of Stelazine therapy, the majority of patients will show a higher intensity level despite constant drug dosage, and violet to bluish test colors of varying intensity may be obtained in the urines of patients receiving a total daily drug dose of as little

¹ Respectively, Chief, Acute Service; Research Biochemist; and Director, Professional Services, VA Hospital, Brockton, Mass.

² Pollack, B. (Am. J. Psychiat., 115: 77, 1958) in evaluating our test 2, tried to extend it to Compazine and found it of limited usefulness for qualitative detection of 50-150 mg. daily dose.

³ Vesell, E. S. (New Engl. J. Med., 260: 1078, 1959): The claim made for a reagent consisting of 10% ferric chloride in 1% hydrochloric acid, of which 1 ml. are added to 3 ml. urine, whereby small amounts of urinary Compazine metabolite are reportedly demonstrable, could not be confirmed by us in a series of 200 urine specimens, containing the metabolites of daily doses of 10 to 15 mg. of drug. The pH of approximately 3 prevailing in this test is unsuitable for the demonstration of Compazine metabolites which call for a test pH of 1 or less, and purple color reactions obtainable at pH 3 are due to other reactants e.g. metabolites of acetylsalicylic acid.

as 24 mg. A small number of tests with SQ 4918, fluphenazine (Prolixin), seemed to follow the same pattern as would be expected in view of the close chemical relationship of these two drugs. The cause of this color shift can not be explained at present, and we are currently investigating whether this unusual reaction of the trifluomethylated derivatives of prochlorperazine and perphenazine is due to actual accumulation of the drugs in body tissues, or whether there is a shift in the ratio of drug metabolites in favor of the intermediary oxidation compounds which account for the metal color complex. In the meantime it is recommended that Stelazine and Prolixin color reactions be considered rather a qualitative means of detecting the drugs than a means of semi-quantitatively estimating the urinary drug level by this test.

RELIABILITY OF MERCURIC NITRATE TESTS

Among a number of heavy metal salts dissolved in more or less concentrated acids, which we investigated for suitability in testing for urinary phenothiazine drug metabolites, there were a number of metals, e.g. cerium, thorium, vanadium, chromium, molybdenum, tungsten, uranium and osmium—all of which may change valency and were thus potential reactants with the intermediary oxidative drug metabolites—which gave excellent and intense color reactions with individual phenothiazine drugs. For the specific group of the piperazine-linked phenothiazine compounds, however, they offered no advantage over the mercuric nitrate solution described, and were less specific in most instances, thus giving rise to a higher percentage of false positive tests.

With regard to false negative tests occurring with mercuric nitrate reagent, none have been seen in more than 3000 examinations, including control tests. During performance of the test, when 10% trichloroacetic acid is added to the urine, a white precipitate will form, if albumin is present, but the color reaction remains distinct. It is theoretically possible that single low drug doses or extremely dilute urines may give false negative tests. In such cases, the test

should be performed 1 to 3 hours after drug administration, during the peak excretion period of drug metabolites.

False positive tests were obtained in approximately 2% (9 in 500) in patients and personnel who were not on phenothiazine drugs and served as controls. Most of these were encountered in cases of impaired liver function, and seem to result from reactions between the mercuric nitrate reagent and bile metabolites. Thus a positive test should not be uncritically accepted in patients with liver abnormality, whereas a negative test is always an unequivocal indication of no recent phenothiazine intake.

The simultaneous presence of any other phenothiazine drugs will interfere with the semi-quantitative evaluation of the phenothiazine-piperazine compounds. Previous administration of other phenothiazine drugs also will interfere with the color intensities, unless at least a 3 months drug-free interval is interposed, since phenothiazine drugs are eliminated in small daily portions over a period of many weeks after discontinuation of drug therapy(4).⁴ Non-phenothiazine derived drugs such as reserpine, meprobamate, various types of energizers, barbiturates, salicylates, vitamins *etc.* do not produce color reactions with the mercuric nitrate reagent, and do not interfere with this test.

ADDENDUM

Some *in vitro* tests on control urines to which very high doses of anti-tubercular drugs such as streptomycin, paraamino salicylic acid or isonicotinic acid hydrazide plus phenothiazine drugs and their metabolites had been added, indicated potential interference with this and previously reported tests for phenothiazine drugs. However, no false positive or

⁴ An unpublished drug discontinuation study has been in progress in this hospital since Feb. 1959, on a group of chronic mental patients stabilized on long term daily doses of various phenothiazine drugs. A preliminary report was given at the Research Conference on VA Cooperative Chemotherapy Studies in Psychiatry at Memphis, May 20-22, 1959, and currently, after more than 18 weeks, 25% of the patients continue to excrete measurable amounts of drug metabolites. A full report, covering the psychiatric, clinical, psychological and biochemical data will be published at a later date.

negative tests were encountered in patients actually receiving combination therapy of anti-tubercular and phenothiazine drugs, in any ratio tested to date. The chemical aspects and clinical implications of the interference observed in vitro is being further investigated in this hospital.

STORAGE OF THE MERCURIC NITRATE REAGENT

The addition of 10% trichloroacetic acid to the urine before mixing with the mercuric nitrate reagent, reduces the acidity of the total volume of the test solution (urine plus reagent), and prevents some false positive tests. However, the 10% trichloroacetic acid can not be pre-mixed with the mercuric nitrate reagent, since aqueous or alcoholic components, or even prolonged exposure to atmospheric moisture renders the mercuric reagent ineffective for formation of the color complex with the phenothiazine drug metabolites, due to a rapidly proceeding hydration process. The mercuric nitrate reagent must therefore be stored in a tightly closed bottle.

SUMMARY

A specific urine color test for the piperazine-linked phenothiazine drugs (Compazine, Trilafon, Dartal, Stelazine, Prolixin, etc.) is reported, in which 1 ml. of urine is mixed with 1 ml. 10% trichloroacetic acid. To this mixture 1 ml. of 1/1000 molar solution of mercuric nitrate in concentrated hydrochloric acid is added. The resulting color is read within 30 seconds against a color chart showing 4 color intensities, marked from (+) to (++++), for daily drug doses from 10 to 125 mg.

The test is suitable for semi-quantitative determination of Stelazine and Prolixin for the first few weeks of administration only, and thereafter should be used as a qualitative test.

No false negative tests were encountered in over 3000 urine specimens. Two percent false positive tests seen in control specimens are tentatively ascribed to bile metabolites arising from impaired liver function. Potential errors in the interpretation of these tests in case of simultaneous or previous intake of other phenothiazine drugs are discussed.

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BREVITAL ANESTHESIA IN ELECTROCEREBRAL THERAPY

EMERICK FRIEDMAN, M.D.¹

In a recent preliminary report⁽¹⁾ Brevital² was found to be an ultrashort acting intravenous anesthetic agent well suited for ambulatory electrocerebral procedures. Rapidity of action and recovery from anesthetic effects were prominent, as well as

ease of administration and freedom from complications. Within the past year, 105 patients have been given a total of 1,460 electrocerebral treatments employing Brevital as the preliminary anesthetic agent. A wide variety of electrocerebral treatments was administered. Anesthetic efficiency, ease of administration, freedom from com-

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² Methohexital (Lilly)

plications, compared favorably with thio-barbiturates. However, the duration of anesthesia was considerably shortened and treated patients returned home or to work from the office in less than half the time noted for other barbiturates. Minimizing the barbiturate effect was felt to have importance in evaluating this method.

Similar, ultrashort anesthetic action was found in a series of 60 trials without electro-cerebral procedures. In the latter, Brevital was employed for narcosynthetic therapy and for induction of sleep during EEG studies. In all of this work there was noted an absence of unpleasant smell-taste experience, frequently encountered with thio-barbiturates.

It was concluded that Brevital was of distinct usefulness in ambulatory electro-cerebral and in narcosynthetic therapies as well as in procedures requiring very brief anesthesia.

A satisfactory standardization for ECT work was developed. To each 500 mg. ampule of Brevital, was added 30cc. distilled water and 10cc. doses of the solution were drawn in individual syringes. Immediately before administration, atropine sulphate, 0.6 mg. and 20-30 mg. succinylcholine, in solution were added to the syringe. Injection took 10 seconds. ECT (unidirectional) with resumption of respiration was completed in 60 seconds. Awakening occurred in 3-5 minutes with the patients out of bed, ready to leave in about 15 minutes.

Prolonged electrocoma or electrostimulation at times required an additional 5-10cc. of Brevital solution (without succinylcholine) and patients would frequently awaken at the end of 3-7 minutes.

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CLINICAL RESULTS WITH NIALAMIDE (NIAMID) IN CHRONIC REFRACTORY MENTAL DEPRESSIONS

FRANCIS A. GAGLIARDI, M.D.¹

Sigmund Freud is universally accepted as the father of modern psychodynamic psychiatry. However, we sometimes lose sight of the fact that he was originally an organic neurologist. It is not hard to understand, therefore, why he is reputed to have said and written that beneath the superstructure of psychoanalysis, one day we would find the workings of the psyche explainable in organic and biochemical terms. Most of us who have used electro-cerebral treatments of one type or another have come to feel that the current causes some electrochemical change in some part of the brain. Possibly the biochemists and the neurophysiologists are at the threshold of the discovery of the "magic key" that will open the portals to the unknown workings of the psyche. Some of our more enthusiastic pharmacologically-oriented psychiatrists and some pharmaceutical houses would have us believe that we have al-

ready passed beyond the threshold. However, the writer feels that we still have quite a way to go down "Chemistry Road" before we have reached the goal. Nevertheless one of the important signposts along the road is the new group of drugs called the mono-amine oxidase inhibitors and their use as antidepressants. They have been euphemistically called psychoenergizers, a term originally credited to Freud(1).

The first such drug was iproniazid. It proved to be quite successful as an antidepressant. However, iproniazid was also highly toxic, especially to the liver, and has been incriminated in several fatalities. Naturally, there has been considerable interest in finding a suitable safe replacement. Nialamide² brought to my attention as a candidate with less toxicity and equivalent potency, has been used for the past

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² The author wishes to express his thanks to Charles Pfizer & Co. who supplied the Nialamide (Niamid) for this study.

6 months in a specially selected private group of chronic refractory depressions.

Nialamide was given to 42 chronic depressed patients that the writer was thoroughly familiar with for 1 to 12 years. All had received one or more courses of ECT, and many were on maintenance ECT for several years. The criterion for success of the drug was the discontinuance of ECT entirely or the marked diminution of ECT administration to these hard core patients. In common with many psychiatrists who have given thousands of ECT, there is a desire to substitute a less hazardous and less formidable procedure. Despite the technique as described by Impastato(2, 3), which makes the administration of ECT smooth and sophisticated as compared to the early days of "straight" ECT with resultant complications and fractures, we would rather avoid this type of treatment if an equally efficacious agent could be substituted.

This study reveals that almost 80% of the refractory patients treated were improved on nialamide alone or nialamide combined with occasional ECT. The various types of depressions included both psychotic and neurotic categories. The results show that 12 (29%) markedly improved (*i.e.* no further ECT necessary) 21 (50%) improved (*i.e.* the number of ECT was cut to at least

half because the time interval between maintenance treatments was at least doubled), and 9 (21%) were unimproved. The patients who did not respond with this drug were those classified in the agitated depressed group. The drug effect is often slow in onset, requiring about 10 or 12 days at a dose level of 75-100 mg. daily. Because of this, extreme caution should be used in depending on drug alone in highly suicidal patients.

Nialamide showed no toxicity in any patient. Side reactions were few and minor. With many types of mental depressions it would be a safe drug in the hands of the average physician. It may be used alone or in combination with ECT, chlorpromazine, meprobamate, barbiturates. The findings indicate that nialamide is a valuable addition to the group of mono-amine oxidase inhibitors commonly known as psychoenergizers, and is extremely safe and free of toxicity.

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SERUM OXIDASE ACTIVITY IN CHRONIC SCHIZOPHRENICS TREATED WITH TRANQUILIZING DRUGS

LEO E. HOLLISTER, M.D.,¹ AMEDEO S. MARRAZZI, M.D.² AND
JESSE F. CASEY, M.D.³

In recent years oxidation of N, N-dimethyl-p-phenylene-diamine (DPP) by serum has been studied extensively in schizophrenic and normal populations. Originally it was thought that elevated serum oxidase activity in schizophrenics might provide a biochemical diagnostic test(1). This belief has not been substan-

tiated by a number of observers. Either no essential difference between schizophrenic and normal populations in regard to oxidase activity was found or the overlap between groups was so great that the test was valueless for individual patients(2, 3). Even in schizophrenic patients having increased serum oxidase activity, this has been explained as an artifact due to decreased ascorbic acid levels from marginal nutritional intakes(4, 5).

Regardless of whether the test has any diagnostic value, it would be of interest if

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serum oxidase activity reflected clinical changes in schizophrenics under treatment. An opportunity to study this aspect of serum oxidase activity was afforded during a large-scale cooperative study using double-blind controls(6). Chronic schizophrenics were treated with 5 phenothiazines (chlorpromazine, trifluorpromazine, prochlorperazine, perphenazine, and mepazine) and phenobarbital. Measurements of clinical status were made prior to treatment and at the end of 5 and 12 weeks of drug therapy, using the Multidimensional Scale for Rating Psychiatric Patients (MSRPP). During the course of this study measures of serum oxidase activity were obtained on 48 patients at times corresponding with the clinical evaluative measures. Most oxidase determinations followed the original Akerfeldt technique. A few were reported in which minor variations (smaller serum sample, longer incubation period, addition of buffer) were added. The distribution of cases by drug was reasonably even, 10 having received prochlorperazine, 8 trifluorpromazine, mepazine, perphenazine, and phenobarbital, and 6 chlorpromazine.

An attempt was made to correlate changes in serum oxidase activity with changes in the total morbidity score of the MSRPP. Calculations were made of the percentage change for both measures from the period of no drug treatment to the 5th and 12th weeks of treatment. A correlation was then made between the mean percentage changes of both measures. At the end of the 5th week there was no correlation at all. At the end of 12 weeks a weakly negative correlation was obtained (correlation coefficient = $-.24$) which was not significant. A further analysis of the

data was made for each of the specific drug groups. In each case serum oxidase activity was decreased by treatment with phenothiazine derivatives while slightly increased with phenobarbital. However, the differences between the mean changes between the various drug groups were not significant.

On the basis of this study it was concluded that changes in serum oxidase activity were not significantly correlated with clinical improvement in schizophrenic patients treated with phenothiazine derivatives. Such changes as were noted in serum oxidase activity tended to be contrary to expectation, that is, reduction in total morbidity was accompanied by increased oxidase activity. No specific effects on oxidase activity due to pharmacologic actions of individual drugs could be shown, though there was a tendency for the phenothiazine derivatives to decrease activity somewhat.

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CASE REPORTS

TREATMENT WITH HIGH DOSAGE TRIFLUPROMAZINE

M. G. JACOBY, M.B., B.S.¹

In 1958 Jacoby(1) described a case of chronic paranoid schizophrenia of 15 years' standing who had not responded to lobotomy. She was given chlorpromazine, reaching a dose of 6,400 mg. daily to control her symptoms. This dose has now been cut to 300 mg. daily (unpublished work) without recurrence of her symptoms.

Further work(2) with phenothiazines in chronic maximally disturbed schizophrenics yielded some satisfactory results in doses of up to 10,000 mg. chlorpromazine daily and 2,000 mg. prochlorperazine daily.

Triflupromazine is a phenothiazine about three times as potent as chlorpromazine and it was decided to try its effects on a maximally disturbed chronic schizophrenic.

Case History.—G.L.G. is a colored female who was born in 1913. Her early life is said to have been normal.

In October 1950 she began to be seclusive. She became mute, resistive and refused to eat, losing 70 lbs. in weight. She was admitted to Central Islip State Hospital in June 1951 with the diagnosis of catatonic schizophrenia. She remained mute and blocked and was started on ECT in December 1951 with only temporary benefit.

In September 1952 she made a homicidal attack on an attendant, trying to strangle her. Following this she continued to be compulsively combative, manneristic, hallucinating and responding to her hallucinations. Permission for lobotomy was refused by her relatives.

In January 1955 she was started on serpasil with only slight improvement. She remained impulsively aggressive, broke windows on many occasions and made several attempts at suicide with broken glass. She stated that she heard the voice of her dead father, and tried to kill herself so that she could join him.

In February 1957 she was started on chlorpromazine, building up to a dose of 3,200 mg. daily but remained confused, disoriented and combative. In May 1957 she turned over two television sets because voices from them were

talking to her and in doing so she severely injured another patient. She was started on regressive shock(3), receiving 32 electroconvulsive treatments in 8 days.

She showed no improvement after this treatment and in August 1957 she was started on promazine, building up to a dose of 1,600 mg. daily, with no observable benefit.

In August 1957 she had several grand mal seizures (probably as a result of the ECT) but no abnormality was seen on the electroencephalogram. She was started on dilantin gr. 1½ t.i.d. because of this.

In December 1957 the patient was started on triflupromazine, gradually increasing the dose until a level of 1,000 mg. q.i.d. was attained. At this level she was in fair contact with her environment, for the first time in many years. She was friendly and sociable and her productions were coherent and spontaneous but rather fragmentary. She denied hallucinations but could sometimes be seen talking to herself and addressing non-existent people. By June 1958 she had improved sufficiently to be given parole of the hospital grounds. Her family were very satisfied with her condition and wished to take her home overnight, although in the opinion of her physician she was not yet well enough.

Table 1 shows the blood level two hours after each dose of triflupromazine. The patient weighed 80 kg. so the dose of 1,000 mg. was equivalent of 12.5 mg. triflupromazine per kg. body weight.

At no time while receiving medication at this level did she show any signs of Parkinsonism, liver damage, blood dyscrasias or hypotensive attacks.

She was maintained on 4,000 mg. triflupromazine daily until February 1959, when she accidentally set fire to herself while lighting a cigarette. This resulted in severe third degree burns, from which she died two months later. At autopsy her liver was normal.

DISCUSSION

This patient showed a response to triflupromazine in very high doses after having been refractory to all other treatment.

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TABLE I

Time	9 am	11 am	1 pm	3 pm	5 pm	7 pm	9 pm	11 pm
triflupromazine	1000mg.		1000mg.		1000mg.		1000mg.	
micrograms triflupromazine per ml plasma		3.2		2.2		1.3		1.7
triflupromazine sulfatide per ml plasma		2.3		2.0		1.5		1.5

At no time did she show any side effects.

The blood levels are probably of little value in assessing the effects of the phenothiazines. The reason for suggesting this is that certain side effects such as Parkinsonism may continue for a considerable time after the administration of the drugs has ceased, and when no apparent drug level can be found in the blood. Smith(4) states that after oral doses of 20 mgs. of triflupromazine per kg. of body weight in dogs he has been unable to find detectable levels of triflupromazine in the plasma two hours later.

It should be appreciated that there is no top level of dosage with the phenothiazines. This class of drugs should be regarded like insulin, in that the average diabetic re-

quires less than 40 units of insulin daily but the resistant case may need many hundreds.

SUMMARY

A case is presented where a dose of 4,000 mg. triflupromazine daily was required to control a chronic schizophrenic.

I wish to thank Dr. Charles I. Smith of The Squibb Institute for determining the plasma levels of triflupromazine.

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HISTORICAL NOTES

DR. PLINY EARLE (1809-1892)

ERIC T. CARLSON, M.D., AND ILLIAN PETERS, A.B.^{1 2}

We celebrate this year the sesquicentennial anniversary of the birth of a great American President, Abraham Lincoln. The American Psychiatric Association can observe a similar celebration in remembering the anniversary of the birth of two of its founders: Thomas S. Kirkbride and Pliny Earle. It seems only appropriate this month to review briefly the life of Pliny Earle, who was born on December 31, 1809, in Leicester, Massachusetts, one of the 9 children of a Quaker family. From his father, young Pliny learned about manufacture, agriculture and carpentry, and thereby gained valuable experience for his later work in hospital administration. In 1826, after completing his preliminary education in Leicester, he enrolled at the Friends' School in Providence, Rhode Island. He remained there as a teacher from 1829 through 1835, being appointed principal the last year. As early as 1832 Earle began to study medicine; in 1835 he entered the University of Pennsylvania Medical School and received his degree in 1837. He decided to continue his education in Paris and combined this objective with an extensive European trip through 1837 and 1838.

Earle was well received in English Quaker circles, and here learned more about the York Retreat through his conversations with Samuel Tuke. Throughout his journey he visited various mental hospitals and met several workers in the field, including Esquirol and Leuret. It appears that his interest in psychiatry antedated his trip, for not only had a beloved cousin suffered from mental illness, but his medical school thesis dealt with insanity. He had been fascinated, moreover, watching Dr. Samuel

B. Woodward treat the patients at the Worcester State Hospital.

On his return to America in 1839 Earle opened an office for general practice in Philadelphia, but in the summer of the following year he gave up his practice in order to become resident physician at the Friends' Asylum in Frankford. He remained there until 1842; in 1844 he accepted the superintendency of the Bloomingdale Asylum in New York City. During the ensuing years he developed an excellent moral treatment program at Bloomingdale and thereby strengthened the status of the physician-superintendent. In 1849, during a period of mental depression, he again went abroad. The years following his return to America he spent in a desultory fashion. Until 1852 he lived in retirement at Leicester, but during the next two years he maintained a consultative practice in New York City and served on the board of visiting physicians to the City Lunatic Asylum on Blackwell's Island. Because of ill-health he returned to Leicester in 1854 and remained there for the next 10 years. In 1856 Dr. Charles N. Nichols, chief of St. Elizabeths Hospital, invited him to Washington, and during the Civil War, after the U. S. Sanitary Commission did not accept his proffered services in 1862, he assisted Dr. Nichols as chief of the male wing of the hospital.

Finally, in 1864, Earle assumed the management of the Northampton State Hospital in Massachusetts. Intended for chronic cases, mainly the foreign pauper insane, it had been badly—and expensively—operated previously. Earle's administrative ability, his frugality, and his love of order and discipline soon achieved a striking transformation. He instituted a dynamic activity program based on patients' labor, and the hospital ceased to be a liability to the state. It became an example (although history may not record it as the best one)

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² This investigation was supported in part by a Research Grant (M-2146) from the National Institute of Mental Health, U. S. Public Health Service.

of what economical and efficient management could accomplish. In addition to improving the hospital's administration Earle also bettered its therapeutic program: when the state instituted a boarding-out plan in 1885 most of the suitable candidates were found in Earle's hospital, evidence that many of his patients achieved virtual recovery.

Besides psychiatry, three other themes predominate in Earle's life: teaching, writing, and a liking for mathematics. He was one of the earlier teachers of psychiatry in this country; in 1853 he lectured on insanity at the College of Physicians and Surgeons in New York, while in 1863 he was appointed Professor of Psychologic Medicine at the Berkshire Medical Institute in Massachusetts.

He was apparently one of the first in America to offer a course of educational lectures to psychiatric patients, reportedly giving one while still a resident at the Friends' Asylum. It is known that he delivered an elaborate series of lectures at the Bloomingdale Hospital, treating such various subjects as: travel in Europe, physiology, electricity, chemistry, and poetry. He lectured to patients at St. Elizabeths Hospital during the Civil War, and later at Northampton he continued his illustrated course, which was attended by approximately half the patients and included 6 lectures on the brain and mental disorders.

Allied to his desire to teach was his inclination to write. Although he never obtained a reputation for literary charm he worked conscientiously from his careful study and observations. Like teaching, writing was part of the family tradition: an elder brother published a Worcester newspaper and his mother loved and composed poetry. Earle is reputed to have published poetry while he was in his teens, and in later years he submitted poems to a number of publications and corresponded with Edgar Allan Poe. Finally in 1841 his collected poems were published in a work entitled *Marathon*.

Earle's professional writings dealt mainly with psychiatry and related subjects. A portion of his graduation thesis appeared in the *American Journal of Medical Sciences*,

while his report of his visit to the European asylums was issued in 1841. Such reviews of hospital practice were to represent the bulk of his published writings. After a second trip through Europe he wrote a more extensive study treating the institutions in Prussia, Austria, and Germany. Perhaps his most famous medical article was one denouncing bloodletting, which appeared in 1854. Earle is best remembered, however, for his studies on the curability of insanity, and it was this work on which he wished to base his reputation for posterity.

His statistical bent was evident as early as 1833, when he analyzed the types of spelling errors found in his students' work. He used statistics somewhat in his graduation thesis and more extensively in his 1848 history of the Bloomingdale Asylum, in which he first pointed out that "cured" patients who relapsed were often admitted as "new" cases. He participated in assessing the U. S. census figures for 1860 and soon afterwards he induced Dr. Nichols to introduce a new form of registration at St. Elizabeths which was reportedly both exhaustive and exhausting. Through his influence similar forms were introduced into the Massachusetts system in 1880. In 1876 he initiated his campaign against the deceptive system of reporting recovery throughout the country, finally publishing his famous book on the curability of insanity in 1887. J. S. Bockoven has well pointed out the negative influence of this work and has demonstrated that Earle himself misused statistics in order to prove his point.

Earle helped to found the American Psychiatric Association and was active in its affairs over the years, serving as its President in 1884-1885. In the latter year he also resigned his position at Northampton but accepted the state's offer of an apartment there and thus continued his bachelor life at the asylum which he had served for 20 years. He busied himself with his correspondence and his magnum opus, a genealogy of the Earle family, until he died on May 17, 1892, leaving over half of his \$100,000 estate to philanthropic causes.

COMMENT

THE LAND OF INSULIN ADDICTION

Not 1,000 miles from here is a country called Ladekspiel where taking insulin is a crime. In Ladekspiel it is said that there is no such disease as diabetes. Any person who suffers from it really needs nothing more than will-power to control his diet. People who take insulin are considered addicts. The sale or use of insulin is severely penalized.

Some soft-hearted people say that the insulin addict can not help himself and that if he does not take his insulin he will die. Most respectable people however consider this nothing but the whining of man without will-power. Since the insulin addict does not want to die he has to get insulin any way he can. Because it is illegal to sell it, the vendors charge enormous prices. The insulin addict has no lawful way of getting enough money to keep himself in supply. So he will steal and commit other crimes to get money to buy enough insulin to stay alive. When he is caught he is sent to prison both for the stealing and for the addiction which caused it. Thus in Ladekspiel, a high proportion of all insulin addicts are also criminals. This confirms the contention that insulin addiction is just a matter of bad character.

The law recognizes that insulin is medication in schizophrenia and that it is as an appetite stimulant. Accordingly doctors are permitted to prescribe insulin for these conditions. Indeed they may prescribe it for any condition other than diabetes. If a doctor prescribes insulin for diabetes, it is held that he is pandering to an evil habit. The doctor can then be sent to prison.

There are two large medical societies in Ladekspiel. One is the Ladekspiel Organization of Physicians, commonly abbreviated LOP. The smaller organization is the Medical Academy of the Nation commonly abbreviated MAN. In the opinion of LOP, no doctor should prescribe insulin for diabetes. They say that diabetes is an imaginary disease and that a doctor who tries to treat a diabetic for insulin is helping to support the underworld. The MAN on the

other hand, believes this is a medical matter and that it should be determined by medical research whether diabetes exists or is just a matter of will-power. All respectable physicians belong to LOP and are afraid to become involved in the controversy.

To track down insulin addicts and people who sell insulin, special squads have been organized by the police. In one big city, the Captain in charge of this squad has an illustrated lecture showing how people commit crimes and women sometimes sell their bodies in order to get money enough to buy insulin. This lecture is called "The Perils of Insulin Addiction." In another big city the Lieutenant in charge of the squad is urging a new law which would require that all people who are addicted to insulin be put to death at once. It is argued that this evil problem would be solved once and for all because then there would be no further demand for insulin and the illegal business would fall off. Some members of the MAN believe that even if this were done, some children would be born into the next generation who would need insulin to keep alive. Most respectable authorities say that this is nonsense.

There is much argument as to whether people become insulin addicted through weakness of character or through bad companions. There is also controversy as to whether addicts take insulin because it makes them feel good or whether they take it to prevent the ill effects of being without it. It has been reported that when an insulin addict goes without insulin he develops a variety of symptoms and sometimes becomes unconscious. In the opinion of most respectable people, however, this unconsciousness is a mere pretense: an effort to win sympathy and get a shot of insulin. They are not fooled by it.

The forces of virtue and respectability have finally won and the government has created the "Squad for Insulin Management and Policing" affectionately abbreviated SIMP. The SIMP has been sworn to a crusade dedicated to wiping out the insulin

evil. The parliament (which, in Ladekspiel, is called the Diet) has passed a law which imposes savage penalties on anyone who is found to have a hypodermic syringe in his possession or anything which could be used as a hypodermic syringe such as a test tube, an eyedropper, or equipment for developing photographic films. The assumption is that anyone who has a hypodermic syringe in his possession is an insulin addict unless proved otherwise. The

law also provides 5 year minimum sentences for selling insulin, buying insulin, using insulin or making a public statement to the effect that insulin might be necessary for certain people.

It is now expected that as the new law is vigorously enforced, peace and justice will descend upon Ladekspiel and that this evil will finally be controlled.

Henry A. Davidson, M.D.,
Cedar Grove, N. J.

SOCIALISM

Socialism is contrary to human nature.

Socialism is inseparably interwoven with totalitarianism and the abject worship of the State.

No socialist system can be established without a political police.

Socialism is the philosophy of failure, the creed of ignorance and the gospel of envy.

—CHURCHILL

CORRESPONDENCE

RYTHMS, CYCLES AND PERIODS IN HEALTH AND DISEASE

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : I have studied Dr. DuBois' paper with great interest. I believe however that no paper concerned with this matter, is complete without the basic research done by Wilhelm Fliess who devoted a lifetime to the investigation of periodicity in animals, human beings and plants, in health as well as in sickness. The result of his research is called : "Fliessche Periodenrechnung." His publications started with : *Wilhelm Fliess. Der Ablauf des Lebens. Grundlegung zur exacten Biologie*, 1906 followed by : *Vom Leben und vom Tode*, 1916, *Das Jahr im Lebendigen*, 1919. Many authors have continued to expand Fliess' theory of periodicity. I recommend the book by Wilhelm Schlieper, *Der Rhythmus des Lebendigen. Zur Entdeckung von Wilhelm Fliess*, 1909 ; for authors who are well versed in bio-statistics and mathematics there is enjoyable intellectual calisthenics available : *Grundzuege der Fliesschen Periodenrechnung von Richard Pfennig*, 1918.

According to Fliess, life on our planet is bound to a fundamental biological unity of measure : a male period of 23 and a

female period of 28 days which are the "lifetime unities" (*Lebenszeiten der Einheit*) of the male respectively female living substance. Fliess' theory was derived from biological observation, starting with the menstrual cycle, then he found his theory confirmed in his studies of the maturational periods of child development. Birth and death of human beings and animals, studies in botany with observation of budding, blossoming and fading of plants, periodicities in the development and solution of pathological processes in human beings were so often expressed in multiples of 28 and 23 days, that he finally started to interpret also the uneven figures which did not fit his theory by combining the 23 resp. the 28 figure, claiming intuitively that human beings are originally bisexual in their "anlage."

Although Fliess has not solved the problem of periodicity he surely has shown the way. It is impossible in a short letter to give more than a vague idea about the "Fliessche Periodenrechnung."

John Lanzkron, M.D.,
Middletown, N. Y.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : I am pleased that Dr. Lanzkron has directed the attention of readers of the Journal to the work of Fliess on the subject of periodicity. The studies of the authors to whom Dr. Lanzkron refers, as well as the contributions of other early investigators, could not be included in a review which was limited, as stated, to

"current thinking" about certain periodic activities.

It is hoped that Dr. Lanzkron's remarks will prompt others to comment on the interesting and voluminous literature pertaining to periodicity.

Franklin S. DuBois, M.D.,
Silver Hill Foundation,
New Canaan, Connecticut.

FUNKENSTEIN TEST

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: A clinical note in the July, 1959 issue of the AJP, Drs. Braun & Rettick present "A Study on the Value of the Funkenstein Test as an Indicator of the Effectiveness of Ataractic Drugs." They present their findings with 30 patients, given the mecholyl and epinephrine test described by Funkenstein, who were subsequently placed on chlorpromazine and reserpine.

They state that the patients were rated according to the blood pressure responses as described by Funkenstein *et al.* in the AJP, July 1949.

In spite of their claims, they do not place the patients in the 7 groups described by Funkenstein. They do not describe what they mean by "mecholyl sensitive" and "epinephrine sensitive" patients (these phrases were not used by Funkenstein). Nor do they indicate what they mean in referring to their amazing group of subjects who showed "No response to Funkenstein Test." Equally provocative is that they found no patient who was "sensitive" to both mecholyl and epinephrine.

Allowing for these deviations from Funkenstein's grouping classifications, however, and jumping right to the presentation of the results and conclusions, we come to the crux of my discontent. The authors, in summarizing their results, submit the following conclusion: "the test offers no prognostic indicator as to the clinical effectiveness of the two drugs tested."

A careful look at the table presented

gives glaringly obvious evidence that the opposite conclusion should have been preferred for in every case patients who made improvement on either chlorpromazine or reserpine had shown "no response to Funkenstein Test." All patients exhibiting any response at all to the Funkenstein Test made no improvement when placed on drugs. Thus the test was 100% accurately prognosticative.

Theoretically, one should expect that this inverse relationship might occur inasmuch as those patients who fall into a Funkenstein grouping that augurs well for EST are mainly patients with depressive symptoms. These patients do not respond best to "tranquilizing" drugs. Patients who do not have a favorable Funkenstein test are more usually the agitated, disturbed type who respond to "tranquilizing-sedative" compounds.

Such a finding is of tremendous value to psychiatry, for if this finding is amplified and verified, we now have an objective criterion for predicting drug therapy outcome.

It will be interesting to see if the Funkenstein Test can be useful in predicting therapy outcome for those patients placed on "antidepressant" medications. Funkenstein does state that the autonomic grouping should predict clinical response regardless of therapy used.

Alberto DiMascio,
Principal Investigator,
Psychopharmacology Research Project,
Mass. Mental Health Center.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: We appreciate the opportunity to answer Dr. DiMascio's letter.

Dr. DiMascio finds the test 100 percent accurately prognosticative. We looked at the results from a different angle: eight out of twelve patients with a no response improved with ataraxics (66.6%).

Apparently our conclusions were not clearly stated. We found that the Funkenstein test offered no prognostic indication to distinguish between chlorpromazine and

reserpine as to their clinical effectiveness.

Epinephrine sensitive means marked blood pressure response (rise), mecholyl sensitive means marked blood pressure fall, both described in the paper by Funkenstein *et al.* (Am. Psychiat., July 1949). No response meant to us no marked change in blood pressure.

Manfred Braun, M.D.,
Seymour Rettick, M.D.,
VA Hospital,
Bronx, N. Y.

OFFICIAL REPORTS

REPORT OF THE SPEAKER OF THE ASSEMBLY OF DISTRICT BRANCHES TO THE MEMBERS OF THE AMERICAN PSYCHIATRIC ASSOCIATION REGARDING THE PROPOSAL TO AMEND THE CONSTITUTION AND BY-LAWS

The accompanying proposals to amend the constitution and by-laws represent a major step in the growth of your APA. The Parliamentarian, Dr. Henry A. Davidson, has prepared the attached memorandum and the Speaker has been directed by the Executive Committee to write this explanation.

At present all new applications for membership in the American Psychiatric Association are handled by the Membership Committee. In recent years it has been swamped by the ever-increasing numbers of applications. The constitutional changes embodied in Proposal 1 permit District Branches *wishing to do so* to assume the function of processing new applications for membership or associate membership arising in their local geographical areas. Acceptance by the local District Branch automatically means APA membership. This is similar to the process whereby acceptance for membership in a county medical society confers membership in the state medical association and American Medical Association.

Proposal 1 also indicates that, where no District Branch exists or where the District Branch does not choose to process the membership applications, the Membership Committee will continue this function. If an applicant is rejected by a District Branch his right to appeal is embodied in section 15.

Proposals 2 and 3 are similar in almost every respect. They contain the regulations for the organization of District Branches (section 1), membership (section 2), processing of APA membership applications (section 3), jurisdictional adjustments (section 4). The remaining sections embody the general rules governing the functioning of the District Branch.

However, if section 2 is compared in Proposals 2 and 3 there is a difference.

Proposal 2 states the District Branch "may elect as *Affiliates*, physicians . . . who are not eligible for membership in the Branch." In Proposal 3 this statement is entirely absent. Proposal 2 was the recommendation of the APA Executive Council while Proposal 3 was added on the written petition of a group of APA members. Paradoxically whether you vote on Proposal 2 or 3 the result will be the same, namely, that the requirements for membership in a District Branch will be the same as for membership in this Association. Dr. Davidson has indicated in his memorandum the implications of these two proposals. Simply stated, an affirmative vote for Proposal 2 would mean that you are favorably disposed to those District Branches wishing to do so having non-psychiatrists (neurologists, pediatricians, general practitioners, internists) participate in the District Branch activities although without membership status. As mentioned, some 10 District Branches have a category of *Affiliates*. These are not *Affiliate Members*. An Affirmative vote for Proposal 3 would not interfere with District Branches having *Affiliates* since as stated by Dr. Davidson, "Proposal 3 would not expel the present affiliates—it would merely fail to write them into our by-laws."

The writer, as Speaker of the Assembly of District Branches, hopes that you will vote affirmatively on Proposal 1. This represents the "coming of age" of the District Branch development in the American Psychiatric Association. An affirmative vote on either Proposal 2 or 3 will provide the rules under which the District Branch will function in relation to the APA.

Respectfully submitted,
Alfred Auerback, M. D.,
Speaker,
Assembly of District
Branches

EXPLANATORY MEMORANDUM ON PROPOSALS TO AMEND THE CONSTITUTION AND BY-LAWS

The ballot carries three propositions, numbered 1, 2, and 3. Number 1 would amend the Constitution by processing most new membership applications through the District Branch. Read sections 14 and 15 to see how that works. If an applicant lives outside the area of a Branch, the present method of election would still apply see section 13.

If you vote "yes" on proposal number 1, you favor the plan of processing new applications through the District Branch if one has jurisdiction.

If you vote "No" on proposal number 1, you favor continuing the present system of election "at-large" with the Branch serving in an advisory capacity. *Note:* An amendment to the By-Laws is needed to effect proposition 1 because that proposition refers to V.3. of the amended By-Laws. If you vote "No" above, then you must also vote "No" on proposal 2 and "No" on proposal 3. If you vote "Yes" on proposal 1, then you must vote "Yes" either on proposal 2 or proposal 3 (but not both).

Numbers 2 and 3 are proposed amendments to the *By-Laws*. The two proposals are identical except in this respect: Under *proposal number 2*, "A District Branch may elect, as Affiliates, physicians . . . who are not eligible for membership. Affiliates are not members and will be ineligible to vote or hold office." Proposal number 3 is silent about this and simply says "Requirements for membership in a District Branch will be the same as for membership in the APA."

If you voted "No" on proposal number 1, you must vote "No" on both #2 and #3.

If you voted "Yes" on proposal number 1, you must vote "Yes" on either #2 or #3.

You cannot vote "Yes" on both #2 and #3 since #3 deliberately omits a sentence that is found in #2.

What is the meaning of the difference between #2 and #3? Proposition number 2 was endorsed by the APA Council. This is the one which *permits* "Affiliates." Some ten District Branches already have Affiliates. Proposition number 3 originated by petition. It is silent about Affiliates.

The arguments in favor of permitting affiliates are (1) Since Affiliates must be physicians, there is no danger of laymen identifying themselves with organized psychiatry under this provision; (2) It permits neurosurgeons, neuropathologists, pediatricians and psychosomatically oriented physicians to take part in our activities—though not to vote; (3) Rejection of proposal 2 would mean open repudiation on nonpsychiatrists already affiliated with ten District Branches; and (4) Welcoming other M.D.'s will reinforce psychiatry's identification with medicine. If you feel this way, vote *yes* on proposal 2 and vote *no* on proposal 3.

Those who prefer proposition 3 say that: 1. A psychiatric organization must not recognize participation by nonpsychiatrists; 2. The other M.D.'s can certainly attend scientific programs as guests, but should not be formally recognized as organic elements of the Branch; 3. Proposal 3 would not expel the present affiliates—it would merely fail to write them into our By-Laws; and they are not recognized in our By-Laws now anyway; and 4. We should not have different standards for Branch and APA membership. If you agree with these points, vote *no* on proposal 2 and vote *yes* on proposal 3.

If you voted *no* on proposal 1, you must vote *no* on both 2 and 3 because proposal 1 cannot work unless either 2 or 3 is adopted.

If you voted *yes* on proposal 1, you must vote *yes* either on #2 or #3 but not both.

PROPOSALS TO AMEND THE CONSTITUTION AND BY-LAWS

PROPOSAL NUMBER 1.

Article III, section 3 of the constitution is amended by adding to the fifth sentence which now reads: "It shall be the duty of this committee to make a report and recommendation to the Council on every application for every class of membership" the following clause: "... except as hereinafter provided."

There are then added to Article III of the Constitution, four new sections as follows:

12. When an application for Membership or Associate Membership is received from a person who has never before belonged to this Association, the Secretary will determine and certify that the applicant does, or does not, reside in an area under the jurisdiction of a District Branch approved for the purpose of processing membership applications, as provided under Article V, Section 3 of the By-Laws. If the applicant does not reside in such an area, the provision of Section 13 below will apply. If he does, the provisions of Section 14 will apply.
13. If the applicant does not reside in an area under jurisdiction of a District Branch, the application will be forwarded to the Membership committee of this Association which will survey it and report thereon to Council. If Council approves, the application will then be submitted to vote by the voting members of the Association at an Annual or Special Meeting. In its recommendation, Council will determine the appropriate grade of membership.
14. If the applicant resides in a locality under the jurisdiction of a District Branch approved for the purpose of processing membership applications, as provided under Article V, Section 3 of the By-Laws, the application will be forwarded to the Secretary of that Branch and the applicant so notified. If the applicant is elected to membership in the District Branch, this will, without further process, make him a member of the American Psychiatric Association in the grade certified as

appropriate by the Secretary of the Association in consultation with the Membership Committee of the Association. If the applicant is rejected by the District Branch, he may, within 90 days of being notified, appeal to the Membership Committee of the American Psychiatric Association. If no such appeal is filed within that time, his name will be withdrawn from further consideration for membership, without prejudice to his right to initiate a new application a year or more after the rejection.

15. If a rejected applicant, under the provision of Section 14 above, appeals to the Membership Committee of the American Psychiatric Association, this Committee will investigate the matter, obtaining from the District Branch the reasons for the rejection. If the applicant wishes, the Membership Committee will grant him a personal hearing without expense to the Association. The Membership Committee will then make a recommendation to Council. Representatives of the District Branch will be invited to appear at the Council Meeting where the matter will be determined. If the Council so decides, the name may be submitted to the general membership for dispositive action; or the rejection of the District Branch may be sustained. If the applicant is elected in spite of the rejection by the Branch, he will become an at-large member of the Association and not a member of the District Branch.

ARE YOU IN FAVOR OF THE PROPOSED AMENDMENT TO THE CONSTITUTION, PROPOSAL Number 1?

_____ Yes _____ No

PROPOSAL NUMBER 2.

Article V of the By-Laws is rescinded and in its place the following is inserted:

Article V:

1. When a group of not less than twenty members, (not more than 20% of whom may be Associate Members), residing in a contiguous geographical district

- covered by the American Psychiatric Association, desire to create a District Branch, they will proceed in the following manner. They will submit to the Recorder of the Assembly of District Branches a petition personally signed by the proposed charter members, together with a proposed Constitution and By-Laws of the Branch, proposing the designation by which it would be known and requesting a specific geographical jurisdiction. The Assembly will consider the application and make report and recommendation to the Council. If the Council approves, the proposal will be submitted to the general membership of the American Psychiatric Association for disposition; if approved by a majority of the members voting, the District Branch will be created.
2. Requirements for membership in a District Branch will be the same as for membership in this Association. A District Branch may elect, as Affiliates, physicians practicing or residing in its geographical area, who are not eligible for membership in the Branch. Affiliates are not members and will be ineligible to vote or hold office in the Branch.
 3. A District Branch shall be considered as approved for the purpose of processing American Psychiatric Association membership applications when its geographical boundaries have been clearly defined in its approved constitution and after certification by its officers to its willingness and ability to serve in this capacity has been received by The Secretary. Such status may be rescinded by written request signed by the President and Secretary of the District Branch and approval by Council or upon recommendation of the Chairman of the Membership Committee with the concurrence of the Assembly and Council.
 4. If the creation of a new District Branch requires an alteration in the jurisdictional area of an existing District Branch, and such change is agreed upon by the existing District Branch, such fact shall be communicated to the Assembly by a letter from the Secretary of the existing District Branch addressed to the Recorder of the Assembly. If such alteration is objected to by the existing District Branch, representatives of both groups will be invited to attend and discuss the matter when it is considered by the Assembly and by the Council. The Assembly will make recommendations to Council and Council will make recommendations to the Membership of the American Psychiatric Association at an Annual or Special Meeting concerning final disposition of the matter according to majority vote.
 5. Each District Branch will elect its officers, arrange its programs, and provide for its own expenses. District Branch Officers shall enter upon their duties at the close of business at the Annual Meeting of the American Psychiatric Association next following their election.
 6. Each District Branch shall select from its membership a representative who shall be elected by the Branch at such time, in such a manner, and for such term as the members of the Branch shall determine. (Balance continues as now written under Article V, Section 2 of the By-Laws.)
 7. The relationship between the Assembly of District Branches and the individual District Branch shall be regulated by the provisions of the Procedural Code as adopted by the Assembly of District Branches.
- PROPOSAL NUMBER 3.**
- This is identical with Proposal Number 2, except that V.2, would read :
2. Requirements for membership in a District Branch will be the same as for membership in this Association.
- NOTE:** You can not vote for both Number 2 and Number 3 as they are reciprocally exclusive. Proposal Number 2 says that a District Branch may "elect as Affiliates, physicians . . . who are not eligible for membership. Affiliates are not members and will be ineligible to vote or hold office." Proposal Number 3 omits this.
- You may, of course, vote "No" on both ;

but you may not vote "Yes" on both.

Are you in favor of Proposal Number 2
(which permits Affiliates) ?

Yes on Number 2

No on Number 2

Are you in favor of Proposal Number 3
(which is silent about Affiliates) ?

Yes on Number 3

No on Number 3

(See explanatory memorandum)

WAR PSYCHIATRY

Psychiatrists are much better informed about people's weaknesses than about their strengths.

World War II had a rate [of rejections for emotional disorders] eleven times as great as World War I. Since there is no basis for believing that the emotional state of the American public has declined during a generation when its health and educational levels were improving, the only tenable explanation for this tremendous rise in the rejection rate was the establishment of a new criterion, reflecting a new philosophy of screening.

During the early part of World War II the Army made its selection standards higher than would otherwise be necessary by insisting that all men had to be convertible into infantrymen, even though no more than two out of five servicemen would eventually serve in ground combat units. This doctrine of maximum convertibility is largely responsible for the fact almost one million men were rejected on psychiatric grounds.

We believe that screening tried to do too much and therefore was largely ineffective.

—ELI GINZBERG, PH.D., and Associates
(The Lost Divisions, 1959)

The worth of the state, in the long run, is the worth often of the individuals composing it; and . . . a state which dwarfs its men, in order that they may be more docile instruments in its hands even for beneficial purposes—will find that with such men no great things can be accomplished.

—John Stuart Mill

NEWS AND NOTES

AMERICAN GROUP PSYCHOTHERAPY ASSOCIATION.—The Association will hold its 4th Annual Institute Stressing the Group Therapist—his personality, training and functions, on January 27 and 28, 1960 at the Henry Hudson Hotel, 353 W. 57 Street, New York City. The 17th Annual Conference of this Association will follow on January 29 and 30, 1960 at the Henry Hudson Hotel.

For program information, write to American Group Psychotherapy Assoc., Inc., 1790 Broadway, New York City 19, Room 516, N. Y.

DR. KENNETH W. CHAPMAN.—The death of Dr. Chapman, Associate Director of the Clinical Center, National Institute of Health, Bethesda, Md., occurred September 18, 1959. Dr. Chapman, a commissioned officer of the Public Health Service since 1939, had been on the Clinical Center staff since 1957. He was an internationally known expert in the treatment of narcotics addicts and had been chief of the Public Health Service Narcotics Hospital, Lexington, Ky., from 1952 to 1954.

NORTH PACIFIC DISTRICT BRANCH APA.—The following officers were elected at the annual business meeting of the North Pacific District Branch of the American Psychiatric Association September 24, 1959: Douglas Alcorn, M.D. Victoria, B. C., president; James G. Shanklin, M.D., Portland, Ore., president-elect; Ralph Stolzheise, M.D., Seattle, Wash., secretary-treasurer. Council Members: John Evans, M.D., Portland, Ore.; Herbert S. Ripley, M.D., Seattle, Wash.; Frank McNair, M.D., Burnaby, B. C.; Charles H. Jones, M.D., Sedro Woolley, Wash., Representative to the Assembly of District Branches of the American Psychiatric Association.

DR. NOYES' NEW APPOINTMENT.—Dr. Arthur P. Noyes, presently retiring as superintendent of the Norristown State Hospital, has been designated Director of

Professional Education by the Pennsylvania Department of Public Welfare. He will give lectures on both the history of psychiatry and medico-legal psychiatry at his own hospital in Norristown and at the Eastern Pennsylvania Psychiatric Institute in Philadelphia and at the Allentown State Hospital.

Dr. Noyes' hospital friends have presented to the Norristown State Hospital a life-sized portrait of him which will hang in the administration building of the institution which he has directed so many years.

DR. CAMERON HONORED.—The Royal Medico-Psychological Association of the United Kingdom accorded Dr. D. Ewen Cameron, chairman of the department of psychiatry of McGill University, the distinction of being made an Honorary Member of the Association at its annual meeting held in Glasgow, Scotland, July 14-17, 1959.

The Royal Medico-Psychological Association is one of the oldest psychiatric organizations, having been established in 1841. Among those who have been made Honorary Members in recent years are the Rt. Hon. Lord Adrian, Sir W. Russell Brain, The Rt. Hon. The Earl of Feversham, Sir David K. Henderson and Professor Carl G. Jung.

THE NEW YORK STATE DIVISIONAL MEETING.—The 1959 Divisional Meeting of the New York State District Branches, American Psychiatric Association, will be held at the Biltmore Hotel, New York City, on November 27, 28 and 29. Scientific sessions and panel discussions will be devoted to topics of current interest: Combined Psychotherapy and Drug Therapy; Soviet Psychiatry; Analysis of Tape-Recorded Psychiatric Interviews; Sociologic Aspects of Psychiatry; After-Care Programs; The Status of Hypnosis in Psychiatric Therapy; Office Psychiatry and Prepayment Plans. Panel participants have been chosen on the basis of their first-hand knowledge of the

controversial issues under consideration.

Dr. Leo Kanner, retiring professor of child psychiatry, Johns Hopkins University, and an international authority in his field, will give the Academic Lecture: Child Psychiatry, Retrospect and Prospect.

AMERICAN EPILEPSY FEDERATION FORMED.—Twenty-three lay epilepsy societies in 11 states banded together in Milwaukee on September 13, 1959, to form the American Epilepsy Federation, the purpose of which is to unite all existing lay societies throughout the world into a single cohesive unit.

Mrs. Albert Grass of Quincy, Mass., is President of the Federation. Physicians on the Board of Directors are W. G. Lennox, Boston, and Harriot Hunter, Denver, Vice-Presidents; Madison Thomas, Salt Lake City, and Augustus Rose, Los Angeles, Directors-at-Large.

The Federation's office is located at 77 Reservoir Road, Quincy, Mass.

DR. BELA MITTELMANN.—The death of Dr. Mittelmann, visiting professor at the Albert Einstein College of Medicine, New York City, occurred October 4, at the age of 60.

Dr. Mittelmann was born in Budapest and was graduated in Medicine from the University of Prague in 1922, coming to the United States soon afterward. He has been a consultant at various New York City Hospitals and for many years maintained a private psychoanalytic practice in the city. He was a diplomate of the American Board of Psychiatry and Neurology. His death was due to a heart attack.

ACADEMY OF PSYCHOANALYSIS.—The mid-winter meeting of the Academy will be held on December 5-6, 1959, at the Hotel Roosevelt in New York City. The theme of the first day's meeting will be "Psychoanalytic Concepts in Allied Fields." Harold Lasswell, Ph.D., will speak on the implications of psychoanalytic concepts for political science. Weston LeBarre, Ph.D., on the implications for anthropology, and Talcott Parsons, Ph.D., for social science. The second day's meeting will be devoted

to clinical papers by members of the Academy.

THE SALMON LECTURES.—The Salmon Committee on Psychiatry and Mental Hygiene has announced the 27th Thomas William Salmon Lectures. They will be given by Curt Paul Richter, Ph.D., professor of psychobiology, the Johns Hopkins Medical School. His subject will be "Biological Clocks in Medicine and Psychiatry."

The lectures will be given at the New York Academy of Medicine, Wednesday, December 2, 1959, afternoon and evening.

SOUTHERN PSYCHIATRIC ASSOCIATION 1959.—The annual meeting of the Southern Psychiatric Association was held October 4, 5, and 6, 1959 at the Sheraton-Dallas Hotel, Dallas, Texas with Dr. Joseph L. Knapp, President, presiding.

The following papers were presented at the scientific session:

"Symbiotic Participation in the Investigation of Schizophrenia" by William S. Wiedorn, Jr., M.D. and Charles Watkins, M.D., New Orleans, La.

"A Sociological and Psychiatric Study of the Interrelationship of Social Structure and Patient Behavior in Mental Hospitals" by Bernard Holland, M.D., Atlanta, Ga.

"Teaching of Behavioral Science to Medical Students and Psychiatric Residents" by William T. Lhamon, M.D., Houston, Texas.

"The Practice of Psychiatry in Small and Medium Sized Communities" by Pete C. Palasota, M.D., Abilene, Texas.

"Some Observations on the Effect of Toxic Doses of Atropine on Cerebral Electro-Activity" by William P. Wilson, M.D., Galveston, Texas.

"Foundations' Interest in Psychiatry and Mental Health" by Robert L. Sutherland, Ph.D., Austin, Texas and Aaron Sartain, Ph.D., Dallas, Texas.

"Current Status of Postgraduate Training in Psychiatry for General Practitioners" by C. J. Ruilmann, M.D., Austin, Texas.

"Drugs and Psychotherapy" by August Yochem, Jr., M.D., Atlanta, Ga.

"Contributions of Psychology to Psychiatry and Medicine" by Robert L. Stubblefield, M.D., Dallas, Texas.

"Electroconvulsive Therapy in The U. S. 1939-1959: Its Development and Problems" by David J. Impastoto, New York City, N. Y.

At the business meeting 23 new members were selected, and the new officers which were elected are as follows:

President: David A. Wilson, M.D., Charlottesville, Va.

President-Elect: Conrad Wall, M.D., New Orleans, La.

Vice-President: Sullivan Bedell, M.D., Jacksonville, Fla.

Vice-President: Benjamin Morton, M.D., Birmingham, Alabama.

Secretary-Treasurer: Richard C. Proctor, M.D., Winston-Salem, N. C.

Board of Regents: James Asa Shields, M.D., Chairman, Richmond, Va.; Joseph Skolba, M.D., Atlanta, Ga.; Frank Latham, M.D., Memphis, Tenn.

A Memorial was held for the deceased members, and a tribute was read to Dr. Howard Masters, a member of the Board of Regents who died last year.

Dr. Wilson announced that the 1960 meeting would be held October 2 through 4 at the Cavalier Hotel at Virginia Beach.

Richard C. Proctor, M.D.,
Secretary-Treasurer,
Southern Psychiatric Association.

REPORTS OF 2ND INTERNATIONAL CONGRESS FOR PSYCHIATRY, ZURICH 1957.—In July 1959 the 4 volumes of the "Congress-Report" (totalizing 1828 pages) were sent to all registered members of the Congress. With this the Organizing Committee has accomplished its task and the Congress Office could be closed. However, some of the parcels were returned by the post offices, presumably due to possible changes of addresses. May I therefore ask all the participants of the Congress, who did not receive this Report, to inform me of this fact by December 31, 1959, at the latest.

Physicians, who were not members of the Congress, and who are interested in the Report (as well as libraries which are interested) can order the four volumes at the price of Swiss Francs 50.—from Art. Institut Orell Füssli A. G., Zeitschriften-Abteilung, Dietzingerstrasse 3, Zürich 3 (Switzerland).

MAX NONNE.—On August 12, 1959, a historical figure of German neuropsychiatry died in his 99th year of life, Max Nonne. His death almost coincided with the death of another giant of the same generation, Oscar Vogt.

Nonne was born, and also died, in Hamburg. He studied medicine in Heidelberg, where W. Erb decisively shaped his entire professional life. Although Nonne belonged to a school of neurology which originated in internal medicine, his interest in psychiatric problems is best exemplified by his contributions to the field of Traumatic Neuroses. During the first world war when he attacked Oppenheim's organic concept of the traumatic neurosis, he saw them as purely psychogenic manifestations and treated them successfully with suggestive methods.

His main contribution was his book *Syphilis und Nervensystem* which was first published in 1903. For several decades he was a world-famous consultant on neurosyphilis, and he himself placed his work as a practicing neurologist above his scientific interests. When Hamburg became a university he was one of the first in Germany to teach neurology as a specialty separated from psychiatry. His neurological service in Krankenhaus Eppendorf included medical and psychiatric material, and it was from here that many leading neurologists of our generation originated.

Nonne was the last survivor of the founders of the *Gesellschaft Deutscher Nervenärzte*. He was honored by many countries and became an Honorary Member of the American Neurological Association. Until recently he took an active part in scientific meetings, and those who knew him will always remember his impressive personality.

AMERICAN JOURNAL OF PSYCHOTHERAPY.—Stanley Lesse, M.D. of the Columbia-Presbyterian Medical Center and of the Faculty of Medicine, Columbia University has been appointed Editor-in-Chief of the American Journal of Psychotherapy. The editorial office is at 15 West 81st Street, New York 24, N. Y.

1959]

HARTFORD FORUM ON INDUSTRY AND MENTAL HEALTH.—On Thursday, October 1, 1959, the Connecticut Mutual Life Insurance Company was host to an all day Forum in the Hartford Club, in which 100 Connecticut industrialists, business executives and professional people met to discuss the responsibility of business and industry in the problem of mental health. The Co-Chairmen of the Forum were Dr. Francis J. Braceland and Dr. Frederick C. Redlich. Six speakers, including two company presidents, two psychiatrists, a company medical director, and a magazine editor, addressed themselves to management to inform it that it must assume its responsibility to employees and to itself by doing something about mental illness.

Mr. Charles J. Zimmerman, President of Connecticut Mutual Life Insurance Company, made the proposal that Connecticut industry take the lead and set up business supported mental health centers to combat the problems which it encounters. Zimmerman suggested that such centers might be used by employees of the supporting companies. It would be the logical third step, he said, in a program designed to combat what has been termed "industry's three billion dollar headache."

The three step program called for joint action among groups of Connecticut industries. Mr. Zimmerman said that various committees should be formed of representatives of the large industrial or business groups to see just what combined action could be taken. These committees should meet with psychiatrists and representatives of mental health organizations.

Secondly, he admitted that the hiring of a full time psychiatrist might only be feasible for very large organizations, but that various companies might band together to hire psychiatric counsel, which would be available to each group. Mr. Zimmerman suggested that industry should be concerned with the mental health of each individual "because we have a responsibility to him, not only as an employee, but as a human being as well." "In fact," he said, "we ask them to spend the major part of their productive time working for us and we must be willing to assume the responsibilities which go along with their

acceptance of our offer." He noted that executives have no corner on tensions and the only way to attack the problem of mental illness among workers in industry is to individualize the treatment.

The only negative note was sounded by one of the top editors of *Fortune Magazine*, who cautioned about carrying management's responsibility for the social welfare of its employees too far.

Dr. John Donnelly noted that society was in the early stages of an era which is producing an integration between two apparently conflicting philosophies, namely that of economic self-interest of management of the industrial era of the 19th century, and the rights of individual man philosophy of employees of this century.

Dr. Robert Turfboer spoke of the mounds made by alcoholism. Dr. Norman Plummer thought that by controlling excessive absenteeism American industry might save five billion dollars annually.

The Forum was noteworthy for the fact that it produced concrete proposals by business and industry to solve one of its own serious health problems.

AMERICAN ACADEMY OF ARTS AND SCIENCES MONOGRAPH PRIZES.—Three \$1,000 prizes will be awarded annually to the authors of unpublished monographs—one each in the fields of the 1. Humanities, 2. Social Sciences, 3. Physical and Biological Sciences.

The final date in 1960 for the receipt of manuscripts by the committee on awards is October 1. Announcement of the awards will be made in December. Full details concerning these prizes may be secured on request by sending a stamped self-addressed envelope to the Committee on Monograph Prizes, American Academy of Arts and Sciences, 280 Newton Street, Brookline Station, Boston 46, Mass.

ISREAL S. WECHSLER LECTURE.—The fifth annual Isreal S. Wechsler Lecture will be given on December 11, 1959 at 8:30 p.m. in the Blumenthal Auditorium of the Mount Sinai Hospital, New York City.

Paul A. Weiss, Ph.D., Professor and Head of the Department of Developmental

Biology at the Rockefeller Institute, will speak on "Problems of Specificity in the Development and Functioning of the Nervous System."

CORRECTION.—In the running-head at the

top of pages 323 and 325 and in the table of contents of the October Journal the name of Jules H. Wasserman, a misprint for Jules H. Masserman, appears in error as co-author. Dr. Franz Alexander was the sole author of this paper.

A DEFINITION OF MIND

MIND, W. A mysterious form of matter secreted by the brain. Its chief activity consists in the endeavor to ascertain its own nature, the futility of the attempt being due to the fact that it has nothing but itself to know itself with. From the Latin *mens*, a fact unknown to the honest shoe-seller, who, observing that his learned competitor over the way had displayed the motto, "*Mens conscia recti*," emblazoned his own shop front with the words, "Men's women's and children's conscia recti."

—AMBROSE BIERCE,
The Devil's Dictionary

"PRIMITIVE" AND "CIVILIZED" THINKING

The primitive mental habit in its general features is best described negatively by the term *unscientific*, and positively by *religious*, in the ordinary connotation of that term. *Superstitions* would be preferable, were it not too narrow; as to *magic*, we do not here distinguish—magic being simply the superstitious or religious *method* as opposed to the scientific. This primitive thinking does not distinguish between the natural and the supernatural, between subjective and objective reality. . . . The fact is that human nature remains fundamentally primitive, and it is not easy even for those most favored by descent to rise above these primitive ideas, precisely because these ideas "spring eternally" from permanent functional causes. Everyone would still be primitive were it not for education and environment, and the importance of these elements in the evolution of the race can hardly be over-estimated.

—ERNEST CRAWLEY,
The Mystic Rose

BOOK REVIEWS

EXPERIMENTAL PSYCHOPATHOLOGY. Edited by Hoch and Zubin. (New York: Grune and Stratton, Inc., 1957, pp. 275. \$6.50.)

In the foreword of this excellent collection of papers Kraepelin is quoted as saying, "it is high time . . . the serious and conscientious investigation of specific problems replaces clever contentions and profound arguments . . . we ought now to proceed to answer them not at the green table (nor arm chair), but in the laboratory; not with clever suggestions but with observation and measurement." The contributors to this volume make many "clever suggestions" but support them with carefully acquired experimental data. Beginning with infra human research, the papers include reports on induced depersonalization, studies on human ecology, experiments in psychotherapy, comments on the creative process in literature, the utility of the model psychosis, and finally investigation of psychosurgical patients. Particularly noteworthy are reports by Brady on the extinction of conditioned emotional responses in rats with ECS, and by Scheffen on the extinction of induced fear in cats. Both authors extrapolate from their observations in the laboratory to the treatment of human illness with Brady implying that psychotherapeutic intervention should be most efficacious in the period immediately following completion of a course of ECT. This would seem contrary to clinical observation.

Richter presents a series of experiments on the much neglected area of the physiology of cyclic behavior. The results suggest that partial destruction of certain endocrine glands produces cycling of activity in rats. This indicates a mechanism for the periodic disorders in man, such as manic-depressive disease, polyserositis, arthralgia.

Von Mering, *et al.* produced depersonalization phenomena in man by administering LSD. The resultant changes in subjects were dependent upon the intensity and the nature of positive and negative feelings induced toward the experimenter. Hoch with his usual clarity discusses the usefulness and importance of the drug produced "model psychosis" in the investigation of schizophrenic mechanisms. The fact that psychotomimetic agents when given to man result in an exogenous, toxic psychosis, was not denied. Their value, according to Hoch, is dependent upon their ability to approximate schizophrenia. Understanding of how they interfere with certain

neurophysiologic, biochemical or psychological systems might then shed light on similar, naturally occurring phenomena in schizophrenia. In the last paper, Lesse describes an attempt to reproduce in schizophrenic patients Penfield's work on "evoked memories" with temporal lobe stimulation. This he was unable to do and he concluded that such memories were related to the conditions which resulted in convulsive disorder in the temporal areas.

Though not all papers are of the same quality, they clearly indicate the need for more "observation and measurement," so that psychiatry may more rapidly move forward.

J. S. GOTTLIEB, M.D.,
Detroit, Mich.

EPILEPSY. By Manfred Sakel. (New York: Philosophical Library, 1958. pp. 204. \$5.00.)

This is a manuscript which was uncompleted at the time of Dr. Sakel's death. The first part is some discussion of the symptomatology, etiology, electroencephalography, and therapeutic aspects of epilepsy. The tenor of the discussion is really too technical for the lay reader and yet too simple and superficial to be of much value to the physician. Also, many of the statements are not generally held by the modern neurologist. The second half of the book deals with an idea for "curing" epilepsy which the author names the "Sakel treatment . . ."; this involves the transplanting of a portion of a "Basedow's thyroid" into the thyroid of an epileptic. Again, modern concepts of neurophysiology, endocrinology, *etc.* are not dealt with.

The book has some historical interest in that it is the last contribution of a well known figure in psychiatry.

W. J. FRIEDLANDER, M.D.,
Boston, Mass.

AN UNHURRIED VIEW OF EROTICA. By Ralph Ginzburg. (New York: The Helmsman Press, 1958, pp. 128. \$4.95.)

Considering the enormous literature on the subject of this book it may come as a surprise to find the present essay confined within such narrow limits (actual text only 96 pages). But the author, who is Articles Editor to *Esquire*, has aimed at presenting an outline history of the subject rather than an anthology of in-

of erotic subjects throughout classical literature, rather than to cater to pornography for its own sake.

He concludes that "the pornography of the century has ever been satisfactorily defined" and quotes D. H. Lawrence: "What is pornography to one man is the laughter of genius to another." It is these matters however that the author's survey is concerned with.

able. The author's friend George Jean Nathan has something to say in this regard in the preface. His book, I think, will go a long way to remove and put to rest the censorship of its time. It should add a valuable dose of reality to the disgraceful general picture of the literature as it has poked into and distorted the American scene." This short preface the author reports was one of the last things Mr. Nathan wrote before his death.

In whorism, it seems, is not a modern invention. We are told that Plato insisted on an unadorned edition of the *Odyssey* for juvenile reading (S.B.C.).

Although his survey is labelled "an unbiassed view," the author proceeds rather frankly through the history of the art he is discussing. He relates pleasant stories of many books and their writers and introduces us to some of the most venerated names in literature, giving special attention to English and American authorship. Along the way he gives choice selections in both prose and verse of the kind of literature he is discussing. Appropriately the earliest English book of bawdry, the *Book of Priety*, was "lovingly compiled as a labor of piety by a monk in that day before bawdry was considered to be indecent."

By the 19th century the author gives to London the credit of becoming the world capital of erotica, and specifically Holywell Street, so named for the "sweete, wholesome, and cleere" water of its holy springs. In the London *Times* of 1857 Holywell is described as "without exception the most vile street in the civilized world" because of the products of its printing presses.

That America should not be found wanting in this line such distinguished names as Mark Twain and Benjamin Franklin are introduced. To Mark Twain is accorded the distinction of having published the first American erotic masterpiece, 1601 in 1876. This book the author revealed years later was written for the enjoyment of his closest friend, the Rev. Joseph Twichell of Hartford, Conn.

It is perhaps worth noting that the world's largest collection of erotica is housed in the Library of the Vatican in Rome (25,000 vol-

umes and some 100,000 prints). The second largest collection is in the British Museum, and the third largest is the Kelsey Collection at Indiana University. This is pretty good for Kelsey who has been collecting only a few years against the Vatican's centuries.

The final chapter in this volume comments on the erotic book market of today—the principal publishers are in Paris, and quotes the elevated prices notable items are likely to bring, auctions being the main source of supply.

Mr. Ginzburg's book is beautifully put together. It is a stately volume bound in solemn black, end papers flaming red.

C.B.F.

DISEASES OF THE NERVOUS SYSTEM. 9th. ed. By Sir Francis Walshe, M.D., and J. M. Walshe, M.R.C.P. (Baltimore: The Williams and Wilkins Co., 1958, pp. 373, \$8.00.)

This is the 9th edition of this book in 18 years by Sir Francis Walshe. Two chapters are contributed by his son, J. M. Walshe, M.R.C.P., one on neurological complications of liver disease and one on hepato-lenticular degeneration. The book is divided into 2 sections and is integrated primarily for medical students and general practitioners. The 1st section, dealing with General Principles of Neurological Diagnosis, exceeds this aim and is the strongest feature of the book. This section is extremely well organized. Although the author implies that his intention was to strip the text of complexities of nervous system anatomy and physiology which might detract from the value of it for the student and practitioner, he succeeds so well in presenting in clear, concise fashion the basic factors. What makes it more appealing is the author's presentation of some of these complexities in a most understandable fashion regarding current concepts of nervous system function which are the result of recently reported work in progress and still the object of investigation which may eventually revise concepts of nervous system anatomy and physiology for the clinical neurologist. Walshe clearly reports about the accumulating knowledge and resulting concepts gaining favor regarding anatomical and physiological features currently being considered in relationship to control of movement, muscle tone, cutaneous sensibility, the role of pyramidal and extra-pyramidal systems and the complexities recently introduced by the brain stem and related areas by activating and integrating systems. He gives clearly described speculations and concepts arising from current studies

regarding possible interrelations of the relationship of the brain stem to cerebral functions, consciousness, intellectual processes, source of convulsive disorders and as a site of integrating motor and sensory functions as well as other functions which may play a greater role physiologically than that which is presently assigned to the cortex. In this the author carefully refers to these as possibilities but states that adherence to conventional anatomical and physiological principles, as in previous editions, will apply to the contents of the text.

The second section is informative in description, with sufficient illustrations, of a selected group of the most common nervous system disorders seen in the general practice of medicine. It contains very few of the rare disorders. The selection of topics is quite inclusive for the purpose. Walshe carefully warns against pitfalls involved in obtaining a history.

It is unfortunate, but understandable, that the author did not include a short description of additional diagnostic aids in neurological diagnosis. The author felt that inclusion of such material was unnecessary as the student or practitioner would not employ them but their inclusion might lead to a better understanding of such diagnostic aids in any subsequent information returned to the practitioner or student by the clinical neurologist. The information regarding cerebral spinal fluid is very meager and, likewise, could be expanded for the benefit of the practitioner who frequently performs spinal fluid examination and where added helps would guide his search more extensively as opportunity for positive findings may exist during the early illness phase before the clinical neurologist is called upon. Nervous system disorders of metabolic origin are confined to relatively few in the added chapters by J. M. Walshe, and a short descriptive listing of others would widen the appreciation of the overlap of metabolic factors endogenous or exogenous, to the nervous system, seen by the general practitioner. The same applies to intoxications of the nervous system other than the few mentioned, particularly in view of occupational hazards in present industry and agriculture.

The matter of treatment of nervous system diseases does not approach the level occupied by presentation of general principles of anatomy, physiology and diagnosis. Much of what is offered needs amplification in view of more effective therapies and there is a spotty inconsistency sometimes of considerable detail in the treatment of some diseases which borders upon the empirical.

Included is a brief account of the common

types of psychoneuroses. The author calls attention to a primary requirement in the practice of medicine in that the practitioner's first obligation is that of exhausting all possibilities of organic disease. Not until then should the practitioner consider the possible interplay of psychological factors and disturbance of function not based upon actual organic disease. In adding this information regarding the more common psychoneuroses and expressing himself so well regarding post-traumatic neurosis, Sir Francis Walshe has provided added value, understanding and practicability of this 9th edition.

WALTER O. KLINGMAN, M.D.,
Professor of Neurology,
University of Texas

NEUROLOGICAL BASIS OF BEHAVIOR. CIBA Foundation Symposium. (Boston: Little, Brown and Co., 1958, pp. 400. \$9.00.)

This interesting and informative volume provides easy access to much of the current information relating brain function to behavior. The symposium was given in commemoration of the birth of Sir Charles Sherrington who may well have had some reservations regarding the contents suggesting unity of the "physical" and "psychical."

The subject matter covered in the symposium was extremely varied in scope with the initial scientific paper on the behavior of nerve cells and the final paper on the clinical response of psychotic patients to injected drugs. The intervening 16 papers emphasized particularly the electrophysiological approach to brain function and behavior, but other avenues are evaluated and among these the biochemical studies are of particular interest.

Possibly because of the nature of the symposium, there are no papers which relate specifically to the function of the frontal lobe and its effect either on behavior or on the function of other areas affecting behavior. The studies reported are concerned primarily with basic instinctual and reflex behavior.

In contrast to this, considerable attention is focused on the temporal lobe and these papers are especially noteworthy. Although the temporal lobes have, for some time, lost the distinction of being a relatively "silent" brain area, these reports adequately lay to rest any lingering, fanciful thoughts of this being a vestigial "smell brain."

Considerable emphasis is given to studies relating directly or indirectly to the function of the reticular formation attesting to the increasing importance attached to this complex system in relation to behavior.

Although brain function and its alteration is approached primarily through electrophysiological methods, important contributions are reported in the more controversial and less well explored field of neuropharmacology and neurochemistry.

The symposium is aimed mainly at the neurologic basis of behavior, but many of the papers report contributions which are certainly of primary interest and importance to the neurophysiologist.

Adequate warning is given by some of the contributors that much caution must be exercised in relating the results of these experimental studies to human behavior and psychiatric problems.

This book presents many noteworthy contributions by eminent authorities and with its wide scope is recommended for reading and reference to those interested in some of the latest information available in the broad field of brain function particularly as it relates to behavior.

WILLIAM C. NOSHAY, M.D.,
Detroit, Mich.

EMOTIONAL PROBLEMS OF CHILDHOOD. Edited by *Samuel Liebman, M.D.* (Philadelphia : J. B. Lippincott Co., 1958, pp. 176, \$5.00.)

Within the limits of less than 200 pages it is manifestly impossible to discuss fully the multiplicity of emotional problems in childhood, but this series of papers effectively calls to the attention of the general practitioner the importance and complexity of this area. The opening chapter by Therese Benedek, M.D. "Psychological Aspects of Pregnancy and Parent-Child Relationship" starts with the premise "the interaction between parent and child begins at conception" and discusses the pattern of psycho-sexual development of men and women as precursor to filling parental roles. Julius B. Richmond, M.D., and Earle L. Lipton, M.D., report their observations on the development of feeding, sleep and motility patterns in infants, and comment on the need for further research in this field. The relationship between speech disturbances and learning difficulties is discussed by Margaret Hall Powers, Ph.D., who also offers specific suggestions for the management of such problems. In considering "Social Maladjustment and Misbehavior in Childhood" Harry M. Segenreich, M.D., calls attention to the variety of developmental factors

and external pressures which contribute to this situation and discusses the importance of parent-child relationships.

The subject of the anxiety-arousing perplexities of adolescence ranging from preoccupation with self to surrounding cultural inconsistencies is developed by Morris A. Sklansky, M.D., in reference to the "influx of psychic energy (which) causes a transitional loosening of the previous character structure." In the chapter devoted to the management of behavior problems in adolescents, Joseph B. Cramer, M.D., presents a detailed account of his successful resolution of such a problem in a 14 year old boy whose mother he "tried to view as an assistant" during the therapeutic process. It is stated that this "management plan was received with relief and enthusiasm" by the father. Joseph J. Michaels, M.D., contributes a succinct discussion of the problem of juvenile delinquency which combines theoretical concepts and excellent documentation into an effective presentation. The special difficulties encountered in the management of the neuroses of adolescence are examined in all their complexity by Eugene I. Falstein, M.D.

The concluding chapter by William Cooper, M.D., deals with the emotional problems of the physically handicapped and contains well selected case summaries which fully support his thesis that "in orthopedic surgery emotional complication supersedes the physical problem in significance." His discussion includes types of emotional problems, their probable etiology and the responsibility of the physician or surgeon for their resolution.

In spite of the diversity of topics, the book achieves unity through the consistently dynamic orientation of the contributors and should prove valuable in specifying the variety of adjustment problems which may be encountered in the practice of general medicine. It is noticeable that no reference is made to mental retardation as a factor in maladjustment and it seems that the fears and anxieties of the latency age child receive rather slight attention. The inclusion of a bibliography relevant to the chapters on "Management of Behavior Problems in Adolescents," "Management of the Neuroses of Adolescence" and "Emotional Problems of the Physically Handicapped child" would enhance the value of the book as a reference work.

MALCOLM J. FARRELL, M.D.,
Waverley, Mass.

REVIEW OF PSYCHIATRIC PROGRESS 1959

HEREDITY AND EUGENICS

FRANZ J. KALLMANN, M.D.¹

Improved techniques for cultivating human cells and the newly achieved accuracy in identifying each of the 46 chromosomes in the normal diploid chromosome complement of man (13, 18, 19, 46, 58, 71, 72) opened a long-sought gateway to penetrating advances in medical (psychiatric) genetics during the past year. With the discovery of distinct chromosomal irregularities in a number of severe pathological conditions such as mongolism, congenital malformations and various disturbances in sexual development, a handful of diligent cytogeneticists began to reduce the long list of psychiatric disorders of hitherto unclear etiology. At the same time, much-needed explanations were furnished not only for earlier genetic hypotheses based on comparative twin and sibship data, but also for the results of diagnostically valuable sex-chromatin tests differentiating between the cells of chromatin-positive and chromatin-negative individuals (4, 26, 44, 52). The methodological principles and conceptual implications of both types of procedure were expertly reviewed in a great variety of symposia and publications dealing with the intricate technical problems of behavioral and population genetics (5, 9, 14, 25, 32, 38, 39, 41, 51, 61, 65, 66, 67, 68, 69, 70, 75).

The exact nature of the disarranged chromosome configuration in mongolism, resulting from non-disjunction of chromosome 21 and conclusively anticipated by serial twin studies, was identified in France by Lejeune *et al.* (46, 47, 69) and immediately confirmed in England by Ford, Jacobs and others (35, 66), in Sweden by Book *et al.* (8), and in the United States by Puck's research group (66, 70). Mongoloid patients

were thereby classified as carriers of 47 chromosomes with a triple chromosome system (two chromosomes 21 from one parent and only one from the other). The unique opportunities offered by this primary trisomic condition for quantitative biochemical studies of the products of genes located on the given chromosome were recognized everywhere.

Equally promising approaches to the construction of a human chromosome map were uncovered by the identification of irregular sex chromosome complements in chromatin-negative females with ovarian dysgenesis (Turner's syndrome characterized by an XO sex chromosome formula and a total of 45 chromosomes due to the loss of a Y chromosome), in chromatin-positive males with testicular dysgenesis, eunuchoid symptoms and an XXY sex chromosome formula (Klinefelter's syndromes with a total complement of 47 chromosomes), and in a sexually underdeveloped superfemale with three X chromosomes (21, 22, 36, 37, 64, 70). Hence, the Y chromosome in man proved to be male-determining, while a complement of 48 chromosomes, with an extra X chromosome and an extra chromosome 21, was found to produce the clinical features of both mongolism and Klinefelter's syndrome (20). Another unusual case of disarranged chromosome structure (45 chromosomes with translocation of autosomal fragments) was observed in a mentally defective boy with delayed physical development and multiple bony deformities of the vertebral column (73).

In line with the theory that gross defects in the larger chromosomes would probably be lethal, it was to be expected that the search for quantitative chromosomal disarrangements would be futile in such conditions as schizophrenia or Wilson's dis-

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case assumed to be due to the effect of major mutant genes rather than to non-disjunction or translocation of entire chromosomes. Other reported "negatives" included Apert's and Marfan's syndromes, anencephaly, and chondrodystrophy (70).

An important contribution to the understanding of the role played by DNA (deoxyribonucleic acid, the ever-present principal component of chromosomal material) in disordered nuclear activity (synthesis of proteins and nucleic acids) was the observation by Allfrey and Mirsky (1, 70) that the phosphoric acid groups dotting the surface of DNA molecules carry negative electrical charges. Following removal of DNA from isolated nuclei, neither protein nor nucleic acid was synthesized, and replacement by electrically neutral or positive molecules failed to reactivate the nuclear chemistry. However, a depleted nucleus was seen to return to normal function when its original DNA content was restored or when it was replaced by another large electrically negative molecule.

The newly accentuated need for adequate books on medical genetics, embodying recent advances in biochemical and cytological genetics, was met by a growing output of specialized textbooks. The biochemical deficiencies detectable as concomitants of mutant gene changes through some faulty link in protein synthesis were competently dealt with in the books of Anfinsen (2), Butler (11), Hsia (31), Lamy *et al.* (45) and Zamenhof (76), and in special chapters and research reports by Abood, Celler and Hoffer (24), Childs (12), Corey and Horowitz (33), Gutman (27), Kety (42), Mautner (48), Racker (53) and Rhoads (55). Some of the long established textbooks appeared in considerably revised editions, including those of Roberts (56), Sinnott *et al.* (60) and von Verschuer (74).

Problems of cytodifferentiation were explored by Hayashi (30) and the contributors to a conference report edited by Rudnik (59), while recent discoveries in the genetic analysis of homograft incompatibility were reviewed by Billingham (7), Brent (10), Medawar (49) and others. Of the multiple histocompatibility genes (15 or more) determining the antigenic substances responsible for eliciting homograft reactions,

the one occupying the so-called H-2 locus seemed to be particularly important. Some of the 10 alleles situated at this locus were shown to produce "transplantation antigens so powerful that hosts which differ from their donors simply at this one locus—that is, with respect to a single antigen—may destroy a homograft within less than two weeks" (7). The evolutionary aspects of human behavior and population structure were reevaluated by Dunn (16), Fischer (17), Roe and Simpson (57) and Sheppard (62).

In the clinical and demographic areas of psychiatric genetics, 4 well-documented research reports were added to the Scandinavian series of monographs; namely, those by Arentsen and Strömberg (3) on a nationwide cross-section investigation of Danish mental hospital patients, with detailed prevalence, morbidity and disease expectancy rates for the various forms of mental illness; by Hallgren (28) on 177 Swedish cases of retinitis pigmentosa combined with congenital deafness; by Kjer (43) on 19 Danish families with 249 cases of infantile optic atrophy which seemed to follow the dominant mode of inheritance; and by Stenstedt (63) on a study of the parents and siblings of 307 patients diagnosed as involutional melancholia "according to Henderson-Gillespie's usage of the term." In Hallgren's survey it was noted that nearly one-half of the affected individuals were either mentally retarded or psychotic, with the majority of the latter showing "a schizophrenia-like symptom picture." The frequency of psychiatric or neurological disorders among their parents and siblings was not found to be higher than that in the general population, but that of matings between first cousins among the parents approximated a rate of 17%.

Stenstedt's data on the genetic aspects of "endogenous affective disorders in later life" were based on patients who had "pure depressions without conspicuous paranoid symptoms." The study yielded an increased morbidity risk figure of 6.1% for the parents and sibs of the index cases, and no evidence for "a genetic connection with any other mental diseases." However, the investigator used the classification of schizophrenia "in a fairly narrow sense," while he subdivided

the affective disorders of the involutional period into psychogenic depression, manic-depressive psychosis and involutional melancholia, combining the two latter categories under the label "endogenous affective disorders." By defining involutional melancholia as "a kind of endogenous depression in later life," the analysis served to confirm a technical peculiarity that had become apparent in previous family studies of this etiologically heterogeneous type of psychosis; namely, the fact that the psychiatric features of the personal histories and family backgrounds to be analyzed tend to depend on the system of clinical classifications used. This technicality was stressed in several comprehensive reports which dealt with classificatory concepts of psychiatric genetics (6, 15, 40, 54).

The long list of other pertinent contributions to the understanding of genetic and eugenic population problems included several books and symposia concerned with the biological, social and psychiatric aspects of fertility, family planning, and control of population growth (23, 29, 34, 50, 67). One of the most interesting findings in the study of Freeman *et al.* (23) on the attitudes of 2,713 white, married women aged 18 to 39 in 1955 was that the majority of couples in this group had a fairly specific idea of how many children they wanted. They used contraceptives to space their children and to prevent conception when they had the desired number, and they were reasonably successful in limiting the number of children, but not always in spacing them according to their plans.

The importance of cytogenetics in current research programs was reflected by the fact that the 1959 Nobel Prize in physiology and medicine was awarded to two American biochemists, Severo Ochoa and Arthur Kornberg, for discoveries related to the synthesis of ribonucleic acid (RNA) and deoxyribonucleic acid (DNA), the two key chemicals in the reproduction of hereditary qualities. While Ochoa found a bacterial enzyme capable of synthesizing RNA in the test tube, Kornberg's contribution was the discovery of an enzyme promoting DNA production from smaller molecules.

The 1959 Thornton Wilson Prize in preventive and genetic psychiatry was shared

by Lauretta Bender and Alfred Mirsky (70).

Altogether, 1959 was a very productive year for medical genetics, and held glowing promises for the future.

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NEUROPHYSIOLOGY, CHEMISTRY AND ENDOCRINOLOGY

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Advancing concepts in neurophysiology (1, 2) usually discussed under the heading of the non specific or reticular complex merit review, particularly in relation to possible application to psychiatry. The reticular or non specific system is better defined on a physiologic than on an anatomic basis. Magoun calls it a central transactional core between the strictly sensory and motor systems of classical neurology. It can be considered anatomically as similar to the diffuse and infinitely complex fiber systems which characterize the brains of lower vertebrates as Herrick described than in amphibia. These relationships have been further elaborated in phylogenetic development. There are many groups of cells in the brain stem and particularly in the midbrain which relate to this complex. These neurons receive collateral branches from the ascending sensory tracts, especially the spinothalamic and spinocerebellar. The proprioceptive or medial lemniscus system gives few collaterals to these cells. On the other hand, the trigeminal sensory nuclei contribute heavily to the sensory inflow. Central areas of the midbrain tegmentum constitute a major termination point for ascending reticular pathways (Nauta and Kuypers). At the caudal border of the thalamus the non specific pathway bifurcates, the ventral portion continuing into the subthalamic region and the dorsal turning into the intralaminar cell groups of the thalamus. An extensive midbrain region projects to the hypothalamus, the preoptic area and the medial septal nucleus.

Sheibel and Sheibel illustrated that the activity of a single reticular cell may be

influenced by stimuli from all the extremities, smell, sound, vagus nerve, cerebellum and cerebral cortex. The reticular cells appear to integrate a number of sensory inputs rather than maintain specificity. These authors studied the structure of the cells. Their axons are of enormous complexity, and branch in cranial and caudal directions. They give off numerous collaterals along their entire course including terminations in the sensory nuclei of the cranial nerves. The thalamic reticular formation appears as a sheet-like continuation of the mesencephalic tegmentum, hugging the internal aspect of the internal capsule. Its structure makes the possibility that it has a filtering function not unlikely. The midline nuclei of the thalamus give rise to axons which influence the activity of the cerebral cortex. The hippocampus and amygdala as well as the neocortex influence reticular activity just as they are influenced by it.

It is established that influences from the brain stem reticular system extend caudad to control sensory activity and patterns of tone. Also, influences extending upward from the midbrain are capable of arousing or awakening the animal and changing the brain wave pattern from a sleeping to a waking one. If the brain stem is transected at the upper midbrain level the animal never awakes. Now evidence is accumulating that the diencephalic portion of the reticular system filters out unimportant stimuli and may thus direct attention. Sharpless showed that a selected musical tone will arouse a sleeping animal and produce significant changes of brain wave pattern. However, repetition of this tone will cause this response to disappear. Widespread cortical ablation including much

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more than the auditory areas of both hemispheres will not prevent the cat from learning not to awaken to a repeated tone, while awaking promptly to a novel one (Jasper). The function of the reticular system in normal adaptive behavior may be in the nature of a prevention of general arousal to all stimuli with a control of selective responsiveness to significant stimuli.

PLEASURE AND PAIN INDUCED BY SELF STIMULATION OF THE BRAIN

Experiments in which an electrode is chronically implanted in the brain and the circuit is arranged so that the animal can deliver shocks to himself at will have elicited results of extreme interest to psychiatrists. Stimulation of certain areas in the basal forebrain elicit feelings that are rewarding, positive or enamoring. Stimulation of other areas are punishing, negative and alienating (Brady). Different portions have quantitative importance. Placing them in the order from most to least rewarding in the monkeys they are, basal tegmentum of the mesencephalon, ventromedial nucleus of the hypothalamus, intralaminar system of the thalamus, septum, upper fornix and putamen. Animals avoid the electric shock when electrodes are placed in certain lateral and posterior parts of the diencephalon and in lateral parts of the tegmentum. The positive rewarding effects can be achieved within a broad system of structures whereas the negative effect is much less extensive.

When electrodes are in certain positive positions animals stimulate their brains more than 5,000 times an hour. Olds believes that the positive effect is derived from stimulation of cells actually involved in hunger, sexual and other reward processes. The rewarding experience often increases the hunger drive. Brady found that the rate of bar pressing in caudate stimulated animals is greatly reduced by feeding to satiety just prior to testing. In certain male animals self stimulation disappeared almost completely after castration, but returned to normal after the androgen level was restored. Others have suggested that the positive effect is of a convulsive nature (Doty). Porter obtained abnormal spike and wave patterns during self stimulation.

Brady showed that animals would tolerate painful stimuli in order to obtain the positive self stimulation response. A conditioned emotional response of the fear or anxiety type failed to appear when the animal was pressing the lever for brain stimulation reward. A monkey receiving a rewarding stimulus has a facial expression of preoccupied relaxation. In general animals being stimulated in these regions are more tractable and have a more affectionate attitude toward the observer. An animal stimulated in the area of negative reward makes an effort to avoid the response and appears to be frightened or in pain. If an animal is left on this circuit for 8 hours there are deleterious after effects, irritability, biting and refusal to eat. This can be reversed by placing the monkey on a rewarding circuit. Andy reported that self stimulation of the amygdala and septal regions raises the pain threshold. Sem-Jacobsen stated that stimulation of the ventromedial region of the frontal lobe relaxed psychotic patients. Sharpless pointed out that the areas most effective in producing positive reinforcement are connected with the ventral branch of the bifurcating reticular activating system.

CHEMISTRY

There is considerable interest in the site of action of sedative, tranquilizing and stimulating drugs within the nervous system. Opinions differ and must be accepted provisionally. Bradley showed that cholinergic drugs do not appear to act on the reticular activating system of the brain stem but more diffusely and on a mechanism which is not concerned with behavioral changes in terms of wakefulness and sleep. This may be the diffuse thalamic projection system. Thus physostigmine, a cholinergic drug, produces a brain wave pattern of wakefulness without alerting the animal. Conversely, atropine, an acetylcholine antagonist produces a brain wave pattern of sleep even though the animal is alert. Both amphetamine and d-lysergic acid diethylamide (LSD25) give a brain wave pattern of wakefulness and the animals become alert and excited. With LSD25 the alerting appears to be dependent upon external stimuli from the en-

vironment. Chlorpromazine induces drowsiness and indifference with a decrease in response to auditory, visual and tactile stimuli. After the midbrain is transected, amphetamine no longer has any effect on behavior or electrical activity suggesting that it acts on the reticular system. It is possible that the effect of amphetamine may be related to its sympathomimetic action since adrenalin is highly concentrated in this region. The effect of LSD25, on the other hand, is lost after section between the cord and brain stem. The LSD25 may exert its influence on receptors more closely related to the collaterals entering the reticular system from the great afferent pathways. Thus the drug may sensitize the reticular system to external influences rather than excite it directly. Chlorpromazine produces only a moderate rise in threshold to responses elicited on stimulation of the reticular formation. At the same time the preparations become unresponsive to afferent stimuli and the latter no longer produce arousal. Phenobarbitone, on the other hand, exerts a depressive reaction on the reticular formation. Blocking of arousal to afferent stimulation may be a more specific action of this drug and may be due to its effect on receptors related to afferent collaterals entering the reticular formation.

Killam and Killam found that chlorpromazine markedly elevates the threshold for behavioral arousal following thalamic stimulation. The action of the drug in increasing the filtering of sensory input may contribute to the failure of behavioral arousal. The responses in the reticular system to evoked activity from the peripheral nerve are enhanced by chlorpromazine as are the inhibitory effects of stimulation of the reticular system on responses in the auditory system. They concluded that chlorpromazine enhances the controlling or filtering effects of the reticular formation on lateral sensory pathways.

ENDOCRINOLOGY

Hume found that there was a rather specific and separate localization in the hypothalamus for the control of the anterior pituitary secretion of corticotropin,

thyrotropin and gonadotropin. The thyrotropin and corticotropin areas overlap and are located in the anterior portion of the median eminence and the post-optic areas. The control of the gonadotropic hormone is in the posterior limb of the pituitary stalk and well localized to a small zone. Hume suggested that separate cell bodies, separate fiber tracts and separate portal veins connect with separate areas in the anterior pituitary controlling the secretion of these three substances. Fisher induced sexual activity in rats by stimulation of the lateral preoptic area. Sawyer presented evidence that the reticular activating system in the midbrain tegmentum and basal diencephalon has important implications in neuroendocrine function. Drugs or lesions which depress or destroy the reticular function inhibit activation of the pituitary ovulating hormone. Spontaneous ovulation is similarly controlled at least in part, by the reticular formation. Harris postulated that endocrine function is affected in a major way by extralemniscal afferent fibers of many modalities influencing the hypothalamus to regulate both lobes of the pituitary gland.

Mason studied the neural control of the pituitary-adrenocortical response. Hypothalamic stimulation produced a marked hormone response. During stimulation these animals showed growing uneasiness, increased alertness and usually refused food. Similarly stimulation of the amygdala induced maximal rates of steroid rise. Minimal behavioral changes were associated with stimulation of the amygdala. A long period of hippocampal stimulation produced no change in the plasma steroid. However, samples drawn 24 to 48 hours later showed a marked suppression to levels well below the normal curve. Mason plotted the normal downward diurnal variation in corticosteroid levels. The peak in both blood and urine corticosteroid levels is in the morning and there is a steady downward trend during the remainder of the day until early morning when there is a sharp rise. Then, in monkeys he interrupted the outflow from the hippocampus either by removing it or sectioning the fornix. After this operation the day and night corticosteroid levels became roughly

apical. He concluded that the hypothalamo-pituitary system appears to be involved in the maintenance of the normal diurnal rhythm in ACTH secretion. He postulated a cyclical mechanism from the reticular formation and hypothalamus up to the limbic system and back again, acting much as a negative feedback or dampening

influence on the hypothalamus and reticular formation.

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ELECTROENCEPHALOGRAPHY

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The number of national and local EEG societies has steadily increased. The *Journal of EEG and Clinical Neurophysiology* has published during the past year proceedings of the American, Austrian, Czechoslovak and Polish, Danish, Dutch, English, French, German, Italian, Norwegian, and Swedish societies. A perusal of these proceedings gives a fair idea of the progress accomplished during the past year as their publication is less delayed than the ever-increasing number of detailed articles.

BASIC STUDIES

Genesis and Significance of the Normal and Abnormal Bioelectrical Activity: The problem of auto-rhythmicity of the nerve cells was submitted to ingenious tests. If the rhythmic electrical activity of a cell were due to an intrinsic mechanism controlling the interval between successive electrical pulses, then the following will occur. An artificial intracellular stimulus, applied through a microelectrode, would reset the rhythms in such a way that the spontaneous pulse following the stimulus will be delayed. The delay will be determined by the interval characteristic of the original rhythm. This is what occurs in an auto-pulsating tactile fiber isolated from the posterior paw of the cat. This was not found, however, in the isolated spinal cord cells(68), where the spontaneous rhythm continues unperturbed despite the additional stimulus. Essentially the same results were found in the cortical neurons of the dog's cruciate gyrus, suggesting that the additional intracellular stimulus does not

invade the structures responsible for the cells' original rhythmic activity. The synaptic bombardment is probably at least as important in determining the cells' pattern of firing(47). On the other hand, the frequency distribution curves of the rhythms of discharge of cortical cells, rather than the mean frequency of this discharge, were found to be sensitive indicators of physiological changes produced in the remote area of the cortex(7). Direct cortical responses resulting from the electrical stimulation of the cortical surface has been classically attributed to apical dendrites. Evidence was presented that this conclusion may be premature as the same type of responses may be obtained in the rabbits' hippocampal pallium where the orientation of the pyramids is opposite to that of the neocortex(33). Slowly propagating slow evoked potentials were recorded in the fornix-fimbria system suggesting further caution in interpreting all such potentials as originating in apical dendrites(38). Microelectrode analysis of the cortical neurons during experimental epileptic attacks showed a marked increase of the intrinsic frequency of firing(18).

Rhythmic sensory impulses were presented to subjects who had to indicate the cessation of the stimuli. Their reaction times were found to be a function of the frequencies of stimuli except that a non-linear perturbation was observed at stimulus frequency near 10 c/sec. This observation strengthened the hypothesis of the role of alpha activity as a neuronal shutter(9). The importance of the local cortical circulatory homeostasis was considered(32) in the genesis of the three per second spike-and-

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wave activity. As to the delta rhythm, it was considered as indicating the presence of a functionally isolated cortex. Its relatively high incidence in the frontal regions is explained by an easy alteration of the tracks leading to this cortex(64).

Integrative Functions: A colloquium on sensory integrations was recently held in France. In cats, a transection of pons just rostral to the trigeminal rootlets, is followed by a low voltage, fast electro-cortical activity, while, if a transection is carried out more rostrally, a synchronized EEG cortical pattern is observed. This observation suggests the existence of an EEG synchronizing, and possibly sleep inducing influence of the structures located in the caudal brain stem(3, 13, 48). Thus, another reticular regulating system is being investigated. The presence of an alert EEG in certain patients in coma are explained on the basis of the above findings in the mid-pontine preparation(39). Convergence of stimuli originating in different sensory analyzers upon single cells of the basal nuclei(2) was also disclosed suggesting a participation of these structures in the sensory integration. Positive (pleasurable) and negative (adversive) effects of the electrical stimulation of the human brain were described. However, the mapping of these areas was difficult as either effects were observed at distances of less than half of 1 cm(61) and, therefore, are not as clearly distributed as in the lower mammals. A very effective locus for penile erection of the squirrel monkey lies in the medial preoptic region, rostro-ventral to the anterior commissure(42). Stimulation of the supracallosal mesial cortex in unanesthetized conscious cats produces bizarre behavior patterns and autonomic dysfunction of psychomotor-like character(30). A case of high amplitude vertex spikes in a post-traumatic aggressive behavior disorder was reported(43), thus correlating with the above observation.

Conditioning: Mechanisms of Uchomsky's dominance response should be suspected if precocious or too stable conditioned responses are observed in certain patients. In one of them "conditioned" responses appearing after the third trial of photic stimulation were found from then on following a great variety of different sensory

stimuli which were not previously associated with the photic stimulation; a relationship to obsession and hallucinations is discussed(45). Frequency specific conditioning was elicited using photic stimulation of a frequency at or near the subjects' alpha rhythm. The presence of a conditioned response was ascertained by quantitative analysis of the record taken just before and just after the conditional stimulus(4). See also(29, 65).

CLINICAL STUDIES

Stimulation and Activation

Photic Stimulation. In 37 patients with unilateral brain tumor lesions, fast rhythms could not be followed on the side of the lesion(16). Evoked occipital potentials are not as pronounced when the subject is very alert as when his attention relaxes(58). The diagnosis of hemianopsia is facilitated by electro-oculographic techniques(35).

Acoustic Stimulation. Intra-cerebral microelectrode recording of responses to repetitive clicks in human patients from a relatively wide area of the brain, including the insular cortex, reveals on and off effects as well as driven responses. These 3 different kinds of responses seem to reflect the activity of different systems as they show differential characteristics(11). A constant tone elicited for a period of 15 seconds at intervals of 30 seconds modifies the frequency of brain waves; it activates epileptic discharges in patients (children are more susceptible than adults)(36). On the other hand, an application of clicks (one per second) for 6-30 minutes elicits "drowsy patterns"(34).

Hyperventilation: With increasing age, slow activity induced by hyperventilation shifts from the occipital to the anterior region in adolescents and young adults; in the older age groups a reverse shift is observed (toward the parieto-occipital region)(26). Sleep patterns were observed in certain patients during hyperventilation(54). This is particularly frequent in narcolepsy(8, 55). A hyperventilation response is very prominent in tetany(25, 50, 56). EEG studies demonstrated that in some individuals an apparent normal blood sugar level constitutes a relative cerebral hypo-

glycaemia(74). A quantitative study of voluntary hyperpnea was presented(63).

Sleep: In one patient complaining of intractable insomnia, the absence of memory of sleep was ascertained by EEG. In another patient, the diagnosis of hysterical hemianesthesia could be made by applying tactile stimuli during sleep(60).

A plea for caution was made in the clinical interpretation of activation techniques as a result of a study of a normal population (66).

Pharmacology

Increased synchronization was found with chlorpromazine, promazine, and reserpine (slow waves); meprobamate (fast waves); iproniazid, imipramine (no frequency shift). Desynchronization was found with diethazine, benactyzine, Win-2299, and LSD-25(21). A followup study concerning pentothal activating techniques in psychiatric patients was published: anti-depressants elicit patterns (fast beta and theta waves) which are attenuated or suppressed by the tranquilizers. Thus, the antagonistic effects of these drugs are considered(27). Diminished reactivity to auditory and visual stimuli was observed under the influence of chlorpromazine(17). However, specific visual evoked responses were not affected, while blinking artifacts were(10). Iproniazid increased nestling and attacking behavior and decreased sexual activity in monkeys; while EEG generally showed an increase of slow activity and greater spread of evoked after-discharges (75-100 mgs.) (14). Deane which effects behavior disorders in children elicits fast activity(51).

Vascular Lesions

An increasing number of workers are reappraising the localizing significance of a focal depression and of the delta activity in subdural hematomas(20, 46, 69). Also a great number of workers are using a controlled unilateral carotid compression for the diagnosis of carotid occlusions(23, 40, 41, 44, 73; see also 22, 53).

Behavior Disorders and Psychological Correlations

Unilateral and bi-occipital slow activity was related to behavioral and epileptic

disorders in children(5, 12). However, temporal localization of abnormality in behavior disturbances in children(24, 71) and adults(57) was also stressed. In retarded adolescents and adults the relationship between the alpha index and mental age is not simple; irregular tracings correlate with a poor psychomotor efficiency (49). If one plots the number of delta waves on a vertical axis and the number of beta waves on the horizontal axis in a standardized sample of the temporo-occipital EEG of normal adults, EEG groupings may be defined. They correlate with the durability, profoundness, etc. of feelings and strivings. Increase in beta activity is associated with vehemence, mobility, and velocity of emotions(72).

The level of CSF protein correlates with the excessive amounts of fast and slow activity in the EEG's of patients with schizophrenia or epilepsy. It also correlates with incidence of behavior abnormalities and/or of seizures. After an anastomosis effected by silicone rubber tubing connecting the temporal horn of the lateral ventricle to the subdural space, thus, diluting the protein content of the CSF, the seizure incidence and behavior abnormality were improved(19).

MISCELLANEOUS

Several authors found non-specific EEG abnormalities in muscular dystrophies(59, 70). This suggests that the latter represent a much more diffuse process than previously accepted. A sharp wave pattern was described in Jakob-Creutzfeldt's disease(1). Hyper-synchronous, 3-5 per second waves were frequently found in Friedreich's ataxia (37). Bursts of generalized delta waves preceded tonic manifestations of "cerebellar fits"(28). Sudden bodily jerks upon falling asleep are not associated with paroxysmal electrical discharges(52). An interesting case of epileptic nystagmus was described (31). A relatively high percentage of abnormalities were found in aviation personnel(15, 67). It might be related to the stressful conditions of their activities(62). A survey of RCAF new entry pilot candidates shows that EEG has not yet proved of value in predicting success in flying training(6).

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CLINICAL PSYCHOLOGY

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This year and the last mark the date when, to the several schools which have so far determined the views on psychological man in this country, a new one has been officially added. Existentialism for some time has had considerable influence on psychological and psychiatric thinking in Europe—shown for instance by the fact that the International Congress of Psychotherapy, meeting in Barcelona in 1958, adopted this ideology as its major topic. Thus it became an interesting question in the history of ideas and their relationship to cultural idiosyncrasies when existentialism would make its entry into this country. A growing interest in what people in other places are doing about man's uneasy estate and psychological discomfiture, and the consequent increase of communication seemed to favor acquaintance with an ideology now, even though the latter is decidedly alien to the intellectual temper of this country. Conversely, the overweening force of a pragmatic empiricism which had not changed much since de Tocqueville characterized it, and a profound wariness of speculative theories made it unlikely that existentialism would cut much of a swath here. What room there is for a comprehensive theory of motivation, character and adjustment, had been preempted by psychoanalysis. The very fact of certain similarities between the two, a kinship of orientation in spite of all the obvious and profound differences, also seemed to militate against the advance of existentialism (13, 2). (Both psychoanalysis and existentialism stress drives and anxiety, and the importance of the irrational, as well as subjective experience and the private world of the individual which make introspection the basic method. They have a global view of man, and emphasize "themes." Both hold as a fundamental premise that it matters much more for the individual what an event *means* than what it might objectively be classified to be.)

The progress of existentialism at this date

is therefore something of an historical surprise. Whatever the explanation may be, both for delay and for belated success, the first textbook of existentialist psychology and psychiatry (by May, Angel and Ellenberger (11)) represents a notable contribution. This book gives an historical and philosophical account of the ideology as well as of its application—as "*Daseinsanalyse*"—to the problems of psychopathology by presenting several case studies. After the reader has begun to get used to an unaccustomed frame of reference and a peculiar terminology, he may well acknowledge certain general impressions. Existential psychology seems to be engaged in aspects of conduct which at times seem surprisingly close to those with which psychoanalysis has been concerned. Existentialists seem to prefer the dramatic sweep of issues large as life and death. All the world's a stage, and they like theirs to be no less than the world. At times existentialists appear to be disinterested to the point of disdain in the ordinary events of adjustment to which psychoanalysis has taught us to pay close attention. They often seem more at home in the world of transcendental accomplishments and failures than among the vital banalities of the body, its early crises and conflicts, and the self-made clichés which stem from them. On the other hand, existentialists also have learned to think in terms of a more inclusive image of man, and bring to its study a great deal of subtlety and imagination. Their quest for the meaning of man's collective, and of his private world, and their extensions of the traditional scope of that inquiry could be studied with profit by other schools. In summary, existentialism seems to me to neglect dimensions of conduct, the relevance of which can no longer be questioned; it cultivates others, and to comprehend them has concepts which are challenging and stimulating.

Those interested in a more detailed scholarly account of existentialism, not only as a school, but as a perennial train of philosophical thought, will appreciate Bar-

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rett's monograph(1) and Kaufmann's source book and commentaries(8).

While autonomous in his fusion of various trends of contemporary thinking with the abiding stimulus of psychoanalysis, Schachtel's work(12) clearly shows the influence of existentialist and phenomenological ideas. He stresses especially the activity-seeking qualities of the organism as against the tension-release paradigm of psychoanalysis and of most learning theories. Schachtel limits himself to "emotion, perception, focal attention, and memory," but in conjunction with them provides one of the best syntheses of present-day personality theory in his notable essay on *Memory and Childhood Amnesia* which was first published a number of years ago and now forms the concluding chapter of this book.

Erickson's biographical study of Luther (5) shows the capacities of psychoanalytic ego psychology for illuminating a complex personality together with the issues which affected him and which in the end he himself altered profoundly. The book succeeds both in demonstrating the author's theory of identity which also involves the images and ideologies under the auspices of which identity is formed; and the genesis of a (religious) ideology relative to the genesis of a personality. Erickson's book also shows again how much the psychological interpretation of an historical figure may add to the understanding of the past, if it is informed by sensibility and knowledge of the period. Historical personages have the disadvantage that our knowledge of them is always fragmentary; although it is good to remember how limited our knowledge is even of the personalities we have had a chance to study directly and extensively. An historical figure, however, has one great advantage in spite of all methodological arguments: his course is completed and the lines of sequence and development in his life can sometimes be made more clear than in any immediate subject.

The problem of identity which, due mainly to Erickson's work, has become an important psychological concept, is treated by Wheelis(19) with a view to presenting problems of identity, especially in psychotherapy. The social (interaction) and sociological aspects of identity are discussed in

books by Goffman(6) and by Strauss(16). The methodological problems inherent in the psychological interpretation of history were treated by Wyatt and Willcox in a framework of interdisciplinary cooperation (20).

Among the numerous books of potential interest to the reader of this journal are: a contribution to the theory of therapeutic success by Melanie Klein(9); a survey of one of the newest branches of psychology, linguistic psychology, with impact on psychopathology, by Roger Brown(3); a study of aggression in animals, by J. P. Scott(15) which should be of importance for any theory of aggression in man; an exceptionally well written text on adjustment by Roger Heyns(7), without theoretical dogma and based equally on experimental data and on practical sense; and a *Psychology of Early Childhood* by Landreth(10) with emphasis on genetic and experimental findings.

Finally, among the contributions more specific to clinical psychology should be mentioned: Wechsler's *Measurement of Adult Intelligence* which came out in its fourth, somewhat modified edition(18); a book about the diagnostic and prognostic cues to suicide by Schneidman and Farberow(14); a survey of what is known on the psychology of careers by Super and Bachrach(17); and finally, a comprehensive dictionary of psychological and psychoanalytic terms by English and English(4) which may fill a longstanding gap in the encyclographic aids of psychology.

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CLINICAL PSYCHIATRY AND PSYCHOTHERAPY

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As shown in the reviews of several former years, schizophrenia remains the most prominent topic for research and clinical reporting since it is universally recognized that the solution of this particular mental problem will constitute a major contribution to science, psychiatry, and economics. An overall picture of the disorder has been attempted by Professor Henri Ey(1) of France who presents a clinical and logical analysis in terms of the unity and diversity. The study is based on 366 cases of schizophrenia studied for some 15 years and reveals some interesting suggested definitions of several varieties in the group. In a study of the psychology of schizophrenia, Rashkis and Singer(2) reconsider the "double bind" theory of schizophrenia from the viewpoint of conflict, learning, and organizational theories. Their formulations are capable of being submitted to experimental testing.

A controlled experimental study of simple and choice reaction times in schizophrenia

was reported by Benton and co-workers (3). They found that "impairment in the performance of simple, high speed tasks appears to be a salient behavioral feature in many cases of cerebral disease and schizophrenia. Although they propose that this finding might be interpreted in different ways, it might be that the schizophrenic patients showing marked retardation in simple reaction time constitute a "special brain damaged subgroup." Boverman(4) in a paper on rigidity, chronicity, and resistance to human intervention, points out that "in some respects" patients with this disorder are "highly resilient and very responsive to human intervention." A phenomenological and statistical study of dreams and phantasies as they are found in the "natural history" of schizophrenia by Cappon(5) presents some interesting and informative material, and Bion(6) has described some detailed observations of hallucinations and the results that followed in the analysis of a schizophrenic patient. The mental mechanisms involved are discussed. Additional studies of this kind should be important and rewarding.

An extensive paper dealing with a study of 5 hospitalized families, each with a

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hizophrenic member, is presented by Brodsky (7) of the Family Study Section of the National Institute of Mental Health. The investigation was centered in "direct daily experiences over a period of 2½ years with these families who have lived as family units within the research hospital setting during which time these groups have participated together as family units in daily therapy meetings." Many aspects of method are discussed and impressions described. In a paper entitled "Episodic Behavior Disorders, Schizophrenia or Epilepsy," Monroe (8) presented an elaborate investigation of 20 hospitalized patients with complicated symptoms, which at the descriptive level suggested a diagnosis intermediate between epilepsy and schizophrenia. This special study is an interesting approach to the problem which should be read by those confronted with similar cases.

The literature on manic-depressive reactions reveals only a few contributions during the past year. Among the articles reviewed is that of Gibson and associates (9) on the dynamics of the manic-depressive personality, in which they discuss the family background, the child-parent relationships, and other factors involved in the development of this particular personality. They outline two sets of factors which are important: 1. The state of ego development when major anxiety provoking experiences occur and; 2. The dynamics of interpersonal relationships between the family members. Lichtenberg (10) has studied the clinical, genetic, and dynamic implications, the personality defenses, the early and later management, and also the management of the interrelationships of the patient, the physician, and other persons in the environment during the manic phase of the psychosis. Of interest in differential diagnosis, Jeri (11) reported that of 32 patients suffering with cerebral cysticercosis, observed in the Sanatorio de Enfermedades Nerviosas y Mentales and in the department of Mental diseases of the Instituto Nacional de Enfermedades Neoplasicas in Lima, 28 had mental disturbances along with the neurological symptoms. The mental disorders consisted of deliria, psychotic reactions of the chronic toxic-infectious type, and severe alterations of the personality requiring

elimination of the diagnoses of schizophrenia and manic-depressive psychosis which had been made previously.

In an article on cataplexy, Levin (12) pointed out that this condition which is a temporary "paralysis" or immobilization with loss of muscle tone may be evoked by impulses of aggression associated with guilt. The aggression may be overt and undisguised or it may be symbolic. In its various expressions, it is a conditioned inhibition. "a response to the guilt that attends aggression even when it is unconscious." Kempf in 1920 introduced the term "acute homosexual panic," a reaction which is rather well recognized by clinical psychiatrists but seldom has been discussed in the literature. Glick (13) has made an attempt to define concisely this reaction under the title "Homosexual Panic: Clinical and Theoretical Considerations." It is an acute schizophrenic reaction, and when there is no homosexual content to be found, but only "undue malignant influence, physical violence, or impending death," the author suggests the term "acute aggression panic." Dripps and associates (14) have discussed several aspects of attempted suicide including emergency treatment, the role of the psychiatrist, the attitude of the law, and social problems in the picture. They emphasize that persons who attempt suicide frequently receive inadequate treatment, and advise that the services of an anesthesiologist can be very helpful in special situations, followed by psychiatric help and particularly a careful evaluation of the possibility of a second suicidal attempt. Several examples of "psychic homicide" are offered by Meerloo (15) who relates it to his former concept of "menticide" and brings it into relationship with several aspects of suicide.

The way in which a person considers the real possibility of his own death has been seldom described in the literature of psychiatry. Brodsky (16) has described an interesting patient, whom he treated psychotherapeutically in an article entitled "Liebestod Fantasies in a Patient Faced with a Fatal Illness." The young woman patient attempted to ward off her fear of dying with the fantasy of eternal reunion with her dead brother. In a study of the female castration complex, Bieber and Drellich (17)

and personality of the female sex. They are concerned with the etiology and treatment of female hysteria based on data from clinical studies of hysterical women from psychoanalytic studies of women, and from observations on children. A report by Blum (18) presents the problem of psychogenic sterility in women. Anxiety as a determinant of pregnancy and the function of sexual activity in anxiety are described; an important factor in failure to conceive is anxiety in response to the woman's perception both of herself as a child and of the maternal figure as having malevolent power." Lukianowicz (19) gives a very inclusive review of the literature on transvestism with a bibliography of 104 references. He surveys a wide variety of items pertaining to this subject including terminology and definitions, classifications, causes, psychoanalytic theories, and other types of explanations. The clinical picture and the relationships between it and several other sexual deviations, the role of cultural factors and of social environment are described. Weisman (20) has described a quadrilateral method of psychodynamic formulation by which clinical findings may be integrated with an explanatory hypothesis. The 4 aspects of the formulation depend upon an analysis of: 1. Ego regulating functions; 2. Predominant emotional patterns; 3. Object relationships and; 4. Nuclear elements composed of context, temporal factors and antinomies of wishes and fears. The viewpoint is based on the concept of conflict. The detailed description of this type of formulation suggests that it will be found useful in research and in the practice of psychotherapy.

A statistical study of first admissions with psychoneurosis in New York State institutions during the period 1949-1951 was reported by Malzberg (21) who presented data on legal status, age, environment, economic status, education, marital state, race, nativity, and migration factors. The results are important not only for a survey of the psychoneuroses, but also for comparison with previously accumulated data on the

psychoses. An analysis of the nature of the neurotic process in terms of the social forces operating as universals in the evolution of the neurosis has been presented by Kubie (22). Various trends, theories, and cultural and cultural variables acting on the components of the neurotic process are outlined. A study utilizing a structural technique for the comparison of groups of psychotic, neurotic, and psychotic women was reported by Winokur and co-workers (23). The developmental symptoms of enuresis and somnambulism were apparently not indicators of a later mental disorder. The psychotics had a higher incidence of miscarriages and a lower incidence of somnambulism, and a significantly higher percentage of psychotics had sexual intercourse infrequently. Such factors as menopausal symptoms, dysmenorrhea, frequency of orgasms, and enjoyment of coitus did not differentiate the groups studied.

The clinical picture, the psychopathology, and the prognosis of the well known type of obsession in women who fear they may kill their child are described by Chapman (24). This obsession is usually combined with the obsessive fear of insanity. The patient fears that even such strong ideas of murdering a child must indicate signs of mental disorder and that if this is the case it could easily lead to infanticide. Cancero-phobia was the focus of a study by Fellner (25) who describes two types of patients who go to physicians because of fear of having cancer and who have no objective signs of malignancy. The true cancer-phobics can accept the reassurance and gain relief, while those in whom the idea is a real delusion are unable to accept reassurance, but tend to become increasingly anxious with indications of a severe underlying emotional disorder requiring urgent psychiatric treatment. The role played by anxiety in psychophysiologic reactions revealed by an experimental study of 67 post-lobotomy patients before and following operation was presented by Franks and associates (26). Their results support the hypothesis that the operation reduces the psychophysiologic symptoms and complaints, and that there is a definite decrease in the frequency of reported symptoms when the anxiety is alleviated.

A review of the literature on the subject of *neurotic personality* and the presentation of 17 case histories of patients treated at the Westchester Division of the New York Hospital over a period of 18 years with a discussion of the diagnosis and results of therapy has been published by Wall (27). He emphasizes that "treatment involves such therapy, tube feedings, insulin or electroshock therapy, but also involvement in hospital social activities and separation from families to allow the patient to grow up." The death instinct as conceived by Freud in the light of the second law of thermodynamics is discussed by Saul (28) in a thought-provoking article in which, after presenting the evidence for the theory, he concludes that "it is readily conceivable that just as the forces toward increasing life are reflected in the mind as self-preservation, sex and mating, and the like, so the direction of the chemical processes toward reversal is reflected in a tendency of the whole organism which can properly be termed as a death instinct." In an elaborate study, Kardiner and co-workers (29) have discussed the basic Freudian concepts, subjecting them to a critical examination. The results of the study have been divided into 4 parts, 3 of which have now appeared in print, namely, "Basic Concepts," "The Libido Theory," and "Narcissism, Bisexuality," and the "Dual Instinct Theory." The fourth paper in the series will deal with a new structural hypothesis, a revised theory of anxiety and post-Freudian ego psychology. Alternative explanations are suggested in places where the Freudian concepts are thought to be defective. The alternative explanations are derived from an "adaptational frame of reference rather than from the Freudian instinctual one." Some of the characteristics of dreams have been explored in relation to the conditions prevailing during sleep in terms of the adaptative function of the dream by Ulman (30). He directs attention to the possible role of neurophysiological changes during sleep, the role of the reticular activating system, and other possible important components in the dream work and function. Clinical material is presented to support the theoretical concepts which emphasize that the dream is the unique means of coping

with inner conflict and environment including the sociobiological aspects.

Serban (31) has presented the psychotherapeutic approach of the Pavlovian school to problems of neurosis. In the concepts of this school the social factor in personality formation plays a prominent role, and mental activity results from the function of the brain as determined by the person's existence. In Russian psychology since a neurosis is determined by the existence and by the social factors it has to be studied and treated by the materialistic method conceived by Pavlov. Therefore the psychotherapeutic approach is physiological, materialistic, philosophical and dialectical. Psychotherapy based on Freud and on Pavlov are contrasted. An investigation of the role of sociodynamics in psychotherapy was published by Gordon (32) who studied 601 adults in an experimental group and 98 children as controls. The adults and the children as well were divided into two groups, one treated by dynamic psychotherapy alone and the other by the addition of social therapy. The adults reacted definitely better with social and dynamic therapy combined than with insight therapy alone. The two groups of children showed no marked differences. The social therapy in this extensive study consisted of a betterment of the social environment, emotional support, good friends, social organizations such as clubs and educational opportunities. An article by Stevenson (33) discusses some of the theoretical and practical aspects of the direct instigation of behavioral changes in psychotherapy. He treated 21 psychoneurotic patients by attempting to instigate new behavioral responses on the part of the patient toward persons in his environment with interviews focused principally on the patient's current relationships. Fourteen of the patients were much improved and follow-up interviews ranging from 9 months to several years revealed that improvements had been sustained. During the treatment, the number of interviews with the improved patients averaged 61. The same author (34), in another article advises that much could be learned about psychotherapy by means of studies other than by this method; but emphasizes that a therapy is a therapy, only by its results, and not by theories regardless

of how elaborately they may be formulated.

A discussion of the difficulties and factors that tend to cause patients to drop out of therapy is offered by Gedo (35). The "emotional climate" of premature therapeutic separation is illustrated by case reports, and Cooper (36) emphasizes that prejudicial attitudes are attended by strong emotions. He reports extensive studies to show that physiological tests support this thesis. Results with tranquilizers are now forcing the psychotherapists to take into account their results in therapy, and particularly the nature of the results. Combinations of psychotherapy and drug therapies are now a much advocated approach. Hoch (37) in a useful discussion of the situation, approaches the question as to how much psychotherapy is needed for patients under drug treatment, and particularly the extent of its use in schizophrenic patients. He expresses the belief that the combination is of special importance in such patients especially, if it can be applied without detriment to the therapeutic situation. He places emphasis on the fact that each patient is a special problem requiring sound clinical judgment, and that generalizations or indications for one therapy or another are not applicable. He advises that the experts in psychotherapy pay more attention to integrated treatment. Cattell (38) in an informative survey of the drugs used has published a tabulated list of selected psychopharmacological agents giving clinical names, manufacturer, range of daily dosages, and side reactions. Its value for purposes of reference and guidance is obvious. Some controversial issues are also mentioned. The use of Ritalin in psychotherapy of depressions in aged persons was reported by Jacobson (39), who studied the effect it might have on both reactive and involutional types of depressive states. Manic-depressives were excluded from the study. He found that the drug facilitated communication and cooperation chiefly by its mood elevating effects, and therefore is a useful adjunct to psychotherapy. There was also an increase in alertness and an alleviation of morning depression and fatigue. He also found Ritalin useful in counteracting lethargy or over-sedation from ataractic drugs.

Concerning the psychotherapy of alco-

holism, Leinere (40) explains the attitude of the physician and of the family toward alcoholic problems, and makes a plea to physicians in general to try to understand and to recognize that alcoholism is a disease, and that it is so considered by The American Medical Association, as well as by the public. He outlines in some detail the chief characteristics of the condition, describes what the alcoholic must do to help himself, and explains the special functions of the therapist in such a setting. The role of the family physician in the prevention of emotional disorders is presented by Caplan (41). He advises the family doctor to develop a working relationship with a psychiatrist who can aid him in improving his ability to recognize the emotional needs, the mental health requirements, and the early symptoms of mental trouble in the families where he has to practice among the problems of pregnancy, divorce, bereavement, and other crises with which he is in immediate contact. He is usually in a position to exert a healing effect and to aid in the adjustment of those involved in life problems. Schiff and Pilot (42) offer an approach to psychiatric consultation which they have found adequate in the general hospital setting. It is based on a viewpoint primarily consultation-oriented rather than patient-oriented. Case histories are presented to "illustrate the nature of the concerns not made explicit, how they may operate in the management of the patient, and how they have been dealt with by the consultant."

Among the outstanding books of the year is the two-volume *American Handbook of Psychiatry* (43) prepared by 111 contributors and comprising some 2000 pages. It contains several chapters on clinical psychiatry and psychotherapy.

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PHYSIOLOGICAL TREATMENT

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Several pharmacological and clinical review articles which have appeared during the past year will help the bewildered psychiatrist to organize his information on the vast and growing literature of psychopharmacology. Hippisus and Kanig(1) distinguish three main classes of phenothiazines : the promazine, the mepazine, and the perazine groups, characterized respectively by propyl, piperidyl-methyl or piperdyl-ethyl, and piperazinyl-propyl side

chains. It is the last group, which includes Compazine, Trilafon and Stelazine, that the authors regard as our most potent phenothiazine therapeutic agents. Himwich(2) concurs in this judgment. Hoffman(3) and Hollister(4) have also each written general pharmacological accounts of some of the new drugs, and authoritative general clinical discussions will be found in the recent essays by Delay(5) and by Sargent(6, 7).

TOFRANIL AND OTHER ANTI-DEPRESSANTS

In Germany, Austria, Italy, France, Switzerland, Canada, Cuba, Spain, and in the

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U. S. A. (8-30) almost all reports agree that immodibenzy (Totranil) will relieve at least half the cases of endogenous depression in a matter of days or weeks, and will benefit other types of depression as well. Dosages of 100 to 150 mg. a day are recommended; higher doses are seldom required. Side effects, though common, are usually mild and may involve dryness of the mouth, disturbances of accommodation, headache, dizziness, tremors or twitchings, sweating, flushes, constipation, thirst, insomnia, pruritis, paresthesias, dysarthria and glossitis. More rarely epileptic seizures, confusion, hallucinations or hypomanic states may supervene. Since even the milder side-effects may be distressing to depressed patients, it is advisable to keep dosage to a minimum, especially in older patients. Delay, Deniker and Lemperière(15) think a combination with phenothiazines, especially levopromazine, improves the results.

Its range of usefulness seems similar to that of Marsalid, though individual cases may respond better to one drug than the other. Freyhan(31), Hoff(32) and Kalinowsky(33) all still regard electroshock treatment as the treatment of choice where suicidal risk or other considerations make quick action essential, or where toxic side effects might be disturbing. In milder cases, treatment with Tofranil for a week or two may obviate or reduce the need for EST, and it is also of value in preventing relapse after EST(34). Though neither method of treatment will prevent or delay the return of a cyclic depression, remissions after EST appear to be better maintained. Tofranil can also be cautiously used in handling depressions of the aged(35). As an interesting side light it is also said to be helpful in relieving mucous colitis, rheumatoid arthritis and hypertension(36). The recent supplementary volume(37) of the *Canadian Psychiatric Association Journal* provides an excellent review of the entire subject.

The proceedings of a full and informative conference on the amine oxidase inhibitors have just been published(38). Though the anti-depressant action of Marsalid is remarkable(39, 40), its toxicity gives serious reason for concern. Borenstein and Dabbah(41) report frequent though usually tran-

sient disturbances in liver function, as reflected in cholesterol levels. Nine cases of Marsalid hepatitis are reported from a single hospital in New York(42). Another recent report(43) lists 3 cases. Hoheisel(44) in Germany also describes several. Cases with toxic symptoms of delirium and melena, sometimes with fatal outcome, are reported elsewhere in Europe(45, 46). By the middle of 1958 the New Drug Branch of our Department of Health, Education, and Welfare had heard of 180 cases of Marsalid hepatitis, 20% resulting in death. Both Kielholz(47) and Kalinowsky(33) have abandoned Marsalid because of the serious liver and circulatory complications reported. Meanwhile the producers of Marsalid are making available a new amine oxidase inhibitor of related structure known as Marplan. This is a more potent and more toxic drug, but can be used in smaller doses and is said to have a better therapeutic index(48, 49). B-phenylethylhydrazine (Nardil) is another antidepressant amine oxidase inhibitor that has recently been introduced(50).

Intermittent sleep therapy, induced by various hypnotic combinations, continues to demonstrate its value not only in depressions, but in certain cases of schizophrenia, neurosis(51, 52), and psychosomatic conditions(53) as well.

PHENOTHIAZINES AND OTHER SEDATIVES

Newer reports continue to confirm the value of chlorpromazine in the treatment of schizophrenia(54-56). Thorazine, it is interesting to note, also has a certain antibacterial effect and reinforces the action of several antibiotics(57). In spite of the frequency and prominence of the extrapyramidal side effects perphenazine (Trilafon) also maintains its usefulness(58, 59). A combination with mepazine (Pacatal) reduces the Parkinsonism(60), but may increase the danger of agranulocytosis. Trifluoperazine (Stelazine) is a potent agent in the treatment of hallucinating, deluded, withdrawn, agitated patients, especially paranoid schizophrenics, but also induces marked extrapyramidal effects, especially when doses exceed 20 mg. a day(61-64). Combination with antiparkinsonian drugs such as Cogentin has been found helpful(65). Gearren(66) uses it

in office practice to relieve anxiety. Another active trithionide phenothiazine related to Trilaton is fluphenazine (Prolixin), said to be 25 times more potent than Thorazine, quickly effective in parenteral use, but with the same serious extrapyramidal accompaniments, and a special tendency to induce leukopenia(87). Triflupromazine (Vesprin) is another potent drug, which may induce convulsions, weakness and ataxia. Neither jaundice nor dermatitis has thus far been reported, but aside from its potency and rapidity of action, it seems to have no advantage over Thorazine(68-71). Prochlorperazine (Compazine) has a similar range of indications, similar potency and similarly distressing extrapyramidal side-effects, sometimes reaching alarming proportions(72-74). Reduction of dosage and use of antiparkinsonian drugs are advisable when serious symptoms threaten. One case is described where spasms and severe glottis edema required tracheotomy(75).

Promazine (Sparine) seems to have no real advantage over chlorpromazine, and carries the danger of convulsions, vascular collapse and agranulocytosis, though on moderate dosage (200-600 mg. per day) it is said to be well tolerated(76-79). Levopromazine (known as 6549 RP in France) has been favorably described as a drug of low toxicity and mild action, of particular value in depressions(80-83). Acetylpromazine (Plegicil in France) is more potent than Thorazine but is said to induce no Parkinsonism, though it has been relatively little used, and reports are scarce(84).

Thiopropazate hydrochloride (Dartal) is about 5 times more potent than Thorazine, with a similar range of indications and complications(85, 86). Another new phenothiazine developed by the French firm Specia as 7843 RP is closely related to prochlorperazine, is very potent, calms excitement with great rapidity and has been found helpful even in chronic resistant schizophrenic cases with defect(87, 88). Mention should also be made of the French 4362 RP methopromazine(89), similar to chlorpromazine, and Ciba's 17040, which appears with the usual report of efficacy and low toxicity(90).

N- (2-[1'-methyl-2''-piperidyl]-ethyl)-3-thiomethyl-phenothiazine, abbreviated as

thioridazine, was introduced on the continent by Sandoz as TP 21 and is marketed here as Mellaril(91-96). Though milder in its action than Thorazine, it has a wide range of usefulness and sometimes helps where Thorazine has failed. It is said to be especially effective in moderately excited cases and in certain depressive syndromes with negativism. It relieves insomnia as well as pain and many psychosomatic complaints. On the whole it is well tolerated, though skin reactions have been reported and 10% of treated cases show definite leukopenic tendencies. Extrapyramidal effects are rare, and hepatic dysfunction has not been reported. It has a tendency to induce galactorrhea. Kinross-Wright(97) regards it as a definitely superior drug.

Hydroxyzine (Atarax) is described as especially beneficial in relieving anxiety and bizarre, autistic or delusional thinking(98). Side effects are said to be minimal. Azacyclonol (Frenquel) displays a curiously specific effect on hallucinations, and a trial intravenous test is advised in cases where persisting hallucinations are prominent symptoms(99, 100). Methylpentynol (Oblivon) is recommended for younger children as a well tolerated non-toxic sedative, especially suited to relieve anxious, mildly disturbed, or acutely upset children who are otherwise normal—in hospital ward situations, for example(101, 102).

OTHER NEW DRUGS

Haloperidol, R 1625, is a potent drug, a few mg. of which, administered by injection, quickly controls psychomotor agitation(103). It is also hypotensive. Meduna and Abood(104) have been experimenting with a new hallucinogenic drug, N-ethyl-3-piperidyl cyclopentylphenyl glycolate hydrochloride (Ditran) with an atropin-like anticholinergic action which is said to be very effective in reactive depressions. Dime-thazan is a xanthine caffeine derivative which had a striking restorative effect on a group of debilitated chronically ill patients(105). Simon(106) claims success with a new whole pituitary extract in the treatment of involutional depressions, and Zhuravleva(107) treats schizophrenic and hypochondriacal cases with a series of parenteral injections of a special bovine blood preparation called parenterine.

SYNAPTIC CONDUCTION AND PSYCHOSES

Sigg(106) suggests that Tofranil derives its anti-depressant action by sensitizing central adrenergic mechanisms at the synaptic level while Marsalid protects the transmitter substance from breakdown, and he proposes the reasonable general theory that all anti-depressant agents operate through an activation of central adrenergic mechanisms. Hofer(109, 111) also predicts that the catecholamines will prove to be the crucial factors in depression. During depression the excretion of catecholamines is reduced(110). Perhaps paranoia, a species of over-responsiveness at the other end of the scale, reflects excessive adrenergic activity. Amine oxidase inhibitors like atabrine, cocaine, amphetamine, ephedrine, and several local anesthetics (Tofranil is also a topical anesthetic) can all induce psychotic symptoms. Tofranil, like Marsalid, increases brain serotonin and catecholamines(112). From this point of view the atropin-like character of Tofranil is interesting. But no simple formula can explain all the complexities: small doses of atropin may induce a psychosis(113, 114), but large doses can also relieve one, and atropin coma has been described as virtually specific in terminating manic attacks(115). Flügel(116) suggests that antiparkinsonian drugs tend to be anti-depressive, while drugs like chlorpromazine, which induce Parkinsonism, are contraindicated in depression. Büssow(117) finds that supplementation of reserpine or chlorpromazine with atropin makes it possible to successfully treat depressions. Orphenedrine chlorhydrate, an atropin-like drug, has a striking stimulating euphoriant and anti-depressive action which promises to be useful both as a phenothiazine antidote and in the direct treatment of akinetic depressions(118). Stern(119) also believes that a surplus or deficiency of monoamino oxidase may be the cause of some psychoses.

TOXICITY AND SUICIDES

Sales of psychopharmaca now exceed \$200,000,000 a year in this country(120). In little Denmark (population 4,500,000), 61,000,000 tablets of meprobamate alone were sold in 1958, addiction is widespread, withdrawal symptoms severe, and suicidal

attempts by means of the drug quite common, 87 instances being known to one author(121). Millions of Americans are now using these newer drugs. At the Madison, Wisconsin Poison Information Center, 13 of all inquiries now concern the tranquilizing drugs(122). In 1955 the Public Health Committee of the New York Academy of Medicine knew of 12 tranquilizer poisonings; there were 8 times that number in 1956, including at least 2 fatalities(123). During the past year fatalities have been reported from Trilafon(124), Pacatal(125), and especially from Sparine(126-128), either from agranulocytosis or from vascular collapse. In one series of 3,000 cases treated with Thorazine, Promazine or Compazine, 18 cases of agranulocytosis occurred, many of them in younger patients(129). Attention should also be directed to the very greatly increased liability to thrombosis, thrombophlebitis and pulmonary embolism in patients under chlorpromazine or reserpine(130). In addition to serious hepatic dysfunction, severe spasms or convulsions can occur during treatment with a variety of phenothiazines, including Compazine, Stelazine, Vesprin, Trilafon and Thorazine(131-133). All of the drugs are not only liable to be implicated in suicidal attempts, but some of them may even induce dangerous depressions. In view of this it is essential that publicity be given to the dangers of misuse and abuse of these newer medicines, and that toxicity be adequately advertised. Surveillance and caution are both required, particularly with newer drugs where clinical trial has been brief and inadequate.

MISCELLANEOUS

In a comparative study of a very large case material it was found that acute schizophrenic cases did best when treated at first with insulin coma and later maintained on Thorazine(134). Only the cases of several years duration did better on Thorazine. If this chronic case material is treated for 6 months with at least 300 mg. per day, few cases—and these mostly paranoid or hebephrenic—will be found resistant to treatment(135, 136). Vartanian(137) recommends lithium carbonate in cases of prolonged agitation where Thorazine or

other measures are unavailing, or where it is for any reason contraindicated.

Stevens and Dunn (138) again confirm the fact that thyroid activity is often depressed in psychoses, especially in agitated cases. Danziger's claim of remarkable success with massive thyroid treatment of acute schizophrenic patients should not be disregarded (139).

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PSYCHOSURGERY

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Apparently no group of patients are as grateful to their physicians as those who have had relief of their symptoms through frontal lobe surgery. Ordinary process of follow-up seems largely unnecessary with this group because about 90% either write to us regularly, telephone or report back to the hospital from as far away as Texas and Arkansas. Questionnaires always get a total response and several patients have spontaneously volunteered to talk to prospective surgical candidates . . . We consider this continued friendliness and desire to maintain contact long after leaving the hospital to be a most gratifying result of the

procedure. The well-known habit of the former patient snubbing his psychiatrist in public does not seem to prevail here. Perhaps this pleasant reversal of form has increased our enthusiasm for this therapeutic procedure.

The above quotation from the paper by Slocum, Bennett and Pool (23) epitomizes the social results of lobotomy in patients with chronic anxiety states.

Lobotomy is specific for uncontrollable anxiety. In ordinary patients anxiety can be more or less suppressed by drugs, but as Alexander (1) states, lobotomy is "sometimes the only one that can resolve the

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illness in truly desperate treatment-resistant cases." Fear and worry are listed by Greenblatt (9) as coming under control in a high percentage of cases. Slocum *et al.* (23) state further that: "In all of these 18 patients the sole aim of surgery was to give the patient relief from severely disabling anxiety and break up the concomitant tension." They describe the agonizing suffering before operation and the remarkable improvement after operation: sleep without sedation, a full diet, healing of ulcerative colitis and tuberculosis, control of hypertension, even relief of asthma and hay fever. Of the 13 patients who were not psychotic, 12 returned to a well-adjusted independent existence at home without further hospitalization or continuation of therapy. Far from being damaged by surgery the patients resumed their life patterns with ability that had usually been lost months and sometimes years prior to operation. The patients explained this by the fact that their minds, free of self-recrimination, anxiety and fear, could return to normal function. Sagebiel (21) agrees: "Anxiety, in all its various manifestations, should be the main criterion for determining the selection of patients."

The reverse side of the medal is revealed in several well-controlled studies on chronic patients. Robin, in three papers (18, 19, 20) and Ball *et al.* (2), working with Veterans Administration patients, conclude that lobotomy makes little difference in the eventual outcome.

In Ball's study 185 patients were operated upon and compared with a control group of 185 patients comparable in age, diagnosis and length of illness. Evaluation by rating scales was made over a period of 5 years. "Discharge rates for the standard and bimedial groups increased each year after operation and were significantly higher than that of the controls by the fourth year. The community adjustment of these discharged patients, although below average to marginal, was rated as better for those who had been lobotomized than for the controls." The tranquilizing drugs, introduced during the third year of this study, had more beneficial results upon the control patients than upon the operated ones.

Robin (18) compared 198 leucotomized patients with 198 closely matched controls.

Leucotomy did not improve chances of discharge nor accelerate it; it did not reduce the chances of readmission nor delay it, nor reduce the number of readmissions, nor the total period of readmission; it did not improve hospital behavior as judged by ward level, nor increase the death rate. A second leucotomy did not improve prospects of discharge as compared with the controls.

It would almost be safe to conclude that lobotomy is of little value in the psychoses were it not for a study by Barahal (3) on 1,095 patients (90% schizophrenics), nearly half of them hospitalized for more than 5 years. Five to 10 years later 16% were at home as contrasted with 2% of the controls, that is, patients who were recommended for lobotomy but for whom permission could not be obtained. In the 5-year-plus group of operated patients only 6% were discharged, as contrasted with 44% operated upon during the first year of hospitalization, 38% the second year and 23% in the years 2 to 5. Chronicity is thus shown to be the outstanding factor in the failure of psychosurgery, at least in schizophrenia. Boyd *et al.* (4) describe the therapeutic value of lobotomy on the disturbed wards of a mental hospital, but these figures are no better than those obtained by drugs. Smith and Kinder (24) restudied the Rockland topectomy patients 8 years later and found progressive downgrading when compared with their controls. Superior topectomy produced greater losses than orbital resections. Discriminatory capacity was most markedly reduced.

Hirose (10) followed 280 schizophrenics from 2 to 11 years after a variety of operative procedures. Two-thirds were improved, half of these discharged. He theorizes that changing the patterns of psychologic reactions to the underlying biologic conditions makes rehabilitation possible. Polonio (17) advances theories to explain the alteration in psychotic ideation and behavior that underlies the improvement. Proper choice of patients results in 75% recovery. Sainz (22), with tongue in cheek: "No, the leucotome, long, rounded, sharp, and of virile steel, could well represent an apotheotic phallus, deeply thrust into the very entrails of the brain, satisfying all

basic homosexual urges of the patient in a veritable explosion of libido."

Kalinowsky(12) believes that patients with chronic depressions that do not respond to ECT are excellent candidates for psychosurgery. "In this group pharmacotherapy will be tried but is not the answer because too many different symptoms occur requiring different medication and also because these patients are often quite sensitive to side effects of the drugs, and side effects are particularly disturbing to them."

Robin's(19) negligible results in patients with affective disorders are so out of line with the findings of other investigators as to cast doubt upon the efficacy of the surgery. In a symposium(5) in London, McKissock said that the experimental period was past.

There has been a striking change in the type of clinical case referred for operation . . . This has been reflected in the marked diminution in the number of deteriorated schizophrenics offered for surgery [and] a corresponding increase in the number of patients suffering from symptoms of anxiety, tension, agitation and depression who have failed to respond to all the other accepted forms of treatment.

Referring to 170 leucotomies he performed at one mental hospital, mostly with rostral incisions, he found 60% working, 30% home and only 10% in hospital.

To sum up, rostral leucotomy has proved itself to be a form of treatment carrying a very low risk of life—less than 1%. It produces remarkably little undesirable side-effect and, when used in properly selected cases, chosen by experienced psychiatrists, offers a high rate of recovery.

Knight, whose incisions were made in the lower medial quadrants in 200 patients, achieved 117 recoveries and only 19 failures. "These patients are warm and normal emotionally, and many letters from relatives emphasize the entirely normal life and reaction of the patients after operation." Partridge followed 89 of his original patients 10 to 12 years later. Half of them were continuously out of the hospital. Recurrences of affective disorders were milder. The 7 obsessional, previously totally incapacitated, had been able to lead an approximately normal life without relapse. Elithorn found significant differences be-

tween endogenous and reactive depressives, the former responding much better. "Only one patient suffering from an endogenous illness regretted having a leucotomy. Of the reactive depressives 8 regretted the operation and 9 were neither glad nor sorry." Of the 105 cases only 14 were regarded by the author as failures.

Psychophysiologic reactions in 67 post-lobotomy patients are analyzed by Franks *et al.*(7), revealing a notable loss of symptoms, consequent upon the reduction in anxiety.

Further studies upon interruption of frontal pathways by non-cutting methods are reported by Larsson *et al.*(13) with the proton beam, Lindstrom(14) with ultrasound and Jaeger(11) with hot water injection. The pathologic findings in 25 patients dying at varying periods are ultrasonic irradiation for relief of suffering in terminal malignancy are reported by Nelson, Lindstrom and Haymaker(16). Leaving the dura unopened spares the cortex. The lesions in the white matter are sharply circumscribed, purely necrotic, with little reaction, and their extent is dependent upon the time and energy of the application. The location of the major lesions is variable. Fiamberti(6) brings up to date the Italian bibliography on transorbital lobotomy, 57 references. Freeman(8) surveys the field of psychosurgery in *The American Handbook of Psychiatry*. A biographic sketch of Burckhardt (1836-1907), the Swiss pioneer in topectomy, is given by Müller(15).

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CHILD PSYCHIATRY; MENTAL DEFICIENCY

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In keeping with the practice established last year in this section, comment will be limited to a few contemporary developments in order to permit at least brief critical appraisal.

CHILD PSYCHIATRY

The most noteworthy administrative event of the year has been the establishment of subspecialty certification in child psychiatry(1). The requirement of 4 years of psychiatric training (2 of which are to be spent in working with children) and the encouragement of pediatric training (acceptable in lieu of additional psychiatric experience) can be expected to have a decided impact upon the entire field, with a reemphasis on the medical foundation of pediatric psychiatry. The composition of the Committee on Child Psychiatry and its early actions give promise that an elevation of standards may be achieved without the much-to-be-feared corollary of freezing training programs into repetitive stereotypes. Child psychiatry, legitimized less than 3 decades ago, has now come of age. The distance travelled has been epitomized by the author of the first American textbook (1935) to bear the title: *Child Psychiatry*.

Leo Kanner, now Professor Emeritus at the Johns Hopkins University, has identified the main currents and the tributaries in the history of child psychiatry at the Maudsley (2) and Horney(3) Lectureships. In these scholarly articles he has developed the meaning of the present in the perspective of the past, an undertaking peculiarly fitted to this year of the official designation of the *rites de passage* to full specialist status.

In a theoretical paper of considerable importance, Bowlby(4) has presented a critique of hitherto available conceptual models on the development of the child's tie to his mother. Freud, hampered by the lack of systematic observations on infant behavior and, on his own admission, by the intensity of the father transference of his female patients, underestimated, at least until late in his career, the strength and importance of the infant's early relationship to his mother. Viewing this first object choice as derivative from the reduction of oral tension, Freud ascribed to it no more than a transitional role in the ontogeny of essentially auterotic impulses, which only later converged upon the parent of opposite sex. Child analysts, in disregard of their own insightful clinical observations, continued to subscribe to the classical Freudian

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view of the anacletic basis of the earliest object choice.

Bowlby, with somewhat uncomfortable apologies for his heresy, synthesizes notions borrowed from Piaget and from the ethnologists with his own studies on the consequences of maternal deprivation to present a theory of "component instinctual responses." He describes 5 (but acknowledges that there may be more) inborn behavior patterns: sucking, clinging, following, crying, and smiling; each more or less independent and maturing at its own rate, but becoming integrated and focused upon the mothering person in the normal course of development. "Instinct" in his sense is not drive or motivating force (an unfortunate concept resulting from the mistranslation of "Trieb") but rather built-in species-determined behavior, released or suppressed by appropriate "sign-stimuli" from the environment and by interoceptive signals from within the infant organism. This family of behavior items is conceived as having evolved because of biologic survival value for the newborn. A necessary distinction is drawn between early responses, which are simple functions of fragmentary perceptions in an infant without a differentiated consciousness of self, and the gradual elaboration of a "monotropic" attachment to a mother perceived as a person existing in time and space with a history and individuality of her own (some time toward the end of the first year). Drawing upon anthropoid data, Bowlby argues for the importance of complementary maternal instincts, but here his development is less convincing. One need not deny the likelihood that phylogenetic mechanisms passed on from primate ancestors are present in the human mother in order to contend that they are of minimal importance as contrasted with role of culturally elaborated expectancies in determining her maternal behavior.

Bowlby's insistence upon the independence of the separate components of the infant's instinctual repertoire and his revision downward of the importance of sucking as the basis for attachment to the mother have received striking confirmation in Harlow's studies with infant macaques (5-7). In an ingenious experimental design,

Harlow reared isolated infant macaques with "mother surrogates" consisting of either wire or terry cloth dummies, with or without an artificial "breast" to permit nursing. To summarize his findings, the infant monkeys much preferred the terry cloth figure, *whether or not* it was the source of milk, apparently because of cutaneous and kinesthetic contact sensations. The attachment to the terry cloth "mother surrogate" was remarkably persistent; when it was available, the infant retreated to it in the face of novel or threatening situations and was then enabled to resume exploratory behavior, as contrasted with the cowering and timorous reaction to the same stimuli in its absence. Experiments in progress appear to demonstrate preferential attachment for dummies that permit "clinging contact" rather than mere contact and still more to those that rock back and forth. Details aside, these studies indicate that, at least in the macaque, the infant's attachment to his mother is only minimally related to her nursing role and far more to her function as an object to which the infant clings. This serves to emphasize the importance of the *activity* of the infant in the process of forming a relationship as contrasted with earlier stress upon the neonate solely as a passive recipient. A word of caution is necessary: The capacity for clinging is highly developed in the infant primate for whom it is essential to survival in an arboreal existence; it may constitute a more significant factor in mother-attachment in such animals than it does in man.

Bowlby's views do not resolve all of the issues in the genesis of social behavior. The supporting data rely heavily upon analogy with subhuman behavior; the role of learning is so much more critical in our species than in others that caution is indicated in the translation into human terms from animal experiments, however ingenious. Nonetheless, the great virtue of Bowlby's conceptual model lies in the possibility it presents for experimental analysis in contrast to mere romanticism or misanthropy in interpreting pre-verbal stages of infant development.

The necessity for a careful reappraisal of current clinic practices is evident from two

studies published in the past year. Tuckman and Lavell(8), in a survey of 1,548 outpatient admissions to 11 child guidance clinics in Philadelphia, found that, overall, 59% were patient-terminated, with a strong indication that those families most in need of help were the least likely to complete the treatment process. Equally significant was the finding that attrition rates varied from a low of 26% to a high of 71% at individual clinics; one wonders to what extent differences in type of referral, screening procedures, waiting periods and therapeutic philosophies account for this very sizable variation. Nonetheless, the figures imply an intolerable waste of professional time in the face of the nationwide scarcity of services(9). At the same time, Levitt *et al.* (10) were unable to demonstrate any consistent difference on a number of measures of adjustment between treated and untreated patients some 5 to 6 years after the time of application for psychiatric services. True, this study, despite its very considerable merits, suffers from the limitations of retrospective studies: defectors from services as "controls"; unequal moieties of control and experimental groups lost to follow-up; the unknown therapeutic impact of the diagnostic process on the "controls"(11). Everyday clinical practice is based on the conviction that therapeutic intervention does make a difference; yet this study, like its predecessors(12), challenges the essence of that conviction. How can we account for this disenchanting set of findings? Are the wrong variables being measured so that benefit eludes our net? Is the rate of spontaneous recovery so high as to preclude the statistical demonstration of any but superlatively effective treatment results? Or may the failure lie in the amalgamation of patients from heterogeneous diagnostic categories, in certain of which treatment may be related to outcome and in others of which it is without bearing, either because the disturbance is self-reparative or because it is beyond response to available therapeutic modalities? That this last factor may be relevant is indicated by studies of long term prognosis(13) and of short term response(14) in relation to diagnostic grouping. The time is long past for a critical reexamination of traditional

practice in order to learn to specify who is to be treated, by what method and for how long.

MENTAL DEFICIENCY

Mental deficiency, once the step-child of medicine, a waste basket of heterogeneous disorders possessing in common only the one feature of low intelligence, has become an exciting area of biochemical and genetic research. The central idea behind the resurgence of interest can be traced to Garrod's concept of inborn errors of metabolism (15), which have grown from the 4 he recognized to well over 50 under current study (16). It is now evident that the absence of, or deviant function of, a gene which controls the synthesis of an enzyme in a metabolic sequence may lead to a deficiency of the end-product of the sequence and an accumulation of an excess of intermediary metabolites. These, in turn, may have mass action effects on reversible reactions, inhibit other enzymes, or may themselves be directly toxic or become toxic as they flow over auxiliary metabolic routes. The pathologic consequences of biochemical derangement may be evident (a) at birth, (b) only in the presence of specific dietary intake, or (c) at a later stage in the developmental sequence. Early identification of the biochemical defect may lead to the hope of control by elimination of particular food-stuffs, by dietary supplementation, and, in theory, by the artificial introduction of missing enzymes.

As examples of recently uncovered metabolic defects associated with mental deficiency, the following may be cited: Hartnup disease, a disorder of tryptophan metabolism clinically similar to pellagra but stemming from a failure in synthesis of the apoenzyme rather than from a lack of dietary niacinamide(17, 18); maple syrup disease, so named because of the odor of the urine which contains pathologic amounts of alpha-keto acids(19-21); and sucrasuria, a disorder associated with hiatus hernia and mental deficiency, anomalies that may be independent of one another (22, 23). Therapeutic consequences of these discoveries are yet to come. The one disorder in which the train of pathologic consequences of a genetically determined

enzymatic deficiency can be totally prevented by dietary management from infancy is, of course, galactosemia, discussed in an earlier review(24). The issue is not quite as clear, though highly promising, in phenylketonuria. Good results with a phenylalanine low diet administered from infancy have been obtained by most investigators(25, 26) but not by all(27).

During this same period, methods for the accurate determination of human chromosome number and sex chromatin patterns (28) have led to the uncovering of chromosomal abnormalities in clinical syndromes associated with mental deficiency. The presence of an extra chromosome has been demonstrated in mongolism(29). Klinefelter's syndrome (seminiferous tubule dysgenesis), frequently associated with mental deficiency, displays a discordance between chromosomal and phenotypical sex(30-31). A number of surveys of the sex chromatin patterns of males in institutions for the feeble-minded have been undertaken, with a low (about 1%) but consistent finding of "positive" cases(32-35). These patients, on the basis of direct chromosome counts, appear to have XXY chromosomal constitution(36-37) and are therefore to be regarded not as genetic females but rather as chromosomal intersexes.

The nature of the relationship between the chromosome abnormality, on the one hand, and the mental defect and other evidences of psychopathology, on the other, is as yet unclear. The findings indicate that the factors which influence psychic function are considerably wider than we have recognized. At the least, these developments foretell an era of exciting research which should help to dispel any remaining inclination to regard mental deficiency as an entity and to view the syndromes as "routine."

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OCCUPATIONAL PSYCHIATRY¹

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INTRODUCTION

Interest in occupational psychiatry continues to grow. An editorial in the *New York Times*(1) points out that a recent mental health forum urged that companies set up mental health centers and employ psychiatrists in the same way that they now have hospital facilities and employ physicians. Another indication of the increasing awareness of the importance of mental health problems in industry was the recent annual conference of industrial executives and industrial physicians at Lake Logan, North Carolina, which this year focussed on industrial mental health. A survey(2) by the APA Committee on Occupational Psychiatry reveals that about 200 psychiatrists are currently functioning in some consulting capacity to industry. The National Health Council's forum in Chicago on occupational health devoted two afternoon sessions to mental health in industry. One of the 5 main projects for World Mental Health year 1960 will be, "Mental Health and Developing Industrialization." Dr. Roger Tredgold, of University College Hospital, London, will act as the principal coordinator for this topic. There will be an industrial psychologist from the United States and an industrial psychiatrist from Europe as the other coordinators. The project will need some 15 local country representatives to cover countries in the general areas of Asia, Africa and Latin America.

PSYCHIATRIC PROGRAMING IN INDUSTRY

There seems to be a growing interest in industry for some sort of psychiatric programming. A recent report by McLean(3)

notes that at least 8 corporations employ fulltime psychiatrists and that about 200 companies are using psychiatrists on a part-time basis. He believes that the industrial psychiatrist's main function is to stimulate mental health rather than treat mental illness. The industrial psychiatrist engages in clinical activities, mental health education for management, and in research. A study of long-term incapacity by Henderson *et al.*(4) emphasizes that the main causes of incapacity which accounted for 70% of the total were mental illness.

ALCOHOLISM

Alcoholism continues to be a concern of industry. Thorpe and Perret(5) reporting on a study of 278 problem drinkers known to an industrial medical department revealed that medical, psychiatric measures, Alcoholics Anonymous, or a combination of any of these resulted in an improvement in 60-65% of the cases. Another study(6) of absenteeism, accidents and sickness payments in alcoholics reveals that the problem drinkers were absent 2.5 as many days, cost 3 times as much in sickness payments, and had 3.6 times as many accidents as matched controls. Turfboer(7) reports on an in-plant program for the rehabilitation of alcoholics in an oil refinery on a Caribbean Island. Parr(8) makes a plea for recognition of "incipient addicts" among drinkers or at least to warn them of the risk they are running. D'Alonzo(9) of the Dupont Company has written a book entitled *The Drinking Problem and Its Control*, which describes an experimental plan for the rehabilitation of alcoholics at that company. In this plan a deliberate effort was made to seek out the alcoholics. More than one-half of the cases were said to have been rehabilitated and another 20% were improved.

¹ Appreciation is due the other members of the Committee on Occupational Psychiatry, APA, and American and foreign correspondents.

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SPECIFIC SYNDROMES

A review of the literature reveals that some specific problems have been receiving attention among physicians and psychiatrists working in industry. Mortinsen *et al.* (10), for example, report on the mortality due to coronary disease according to broad occupational groups. Beaumont(11), Edwards(12) and Hill(13) discuss problems related to epileptics in industry. The last author points out that the great majority of patients with epilepsy are psychologically normal people and with the exception of the avoidance of obvious hazards, there should be no restrictions placed on their lives. Gordon(14) discusses the problem of chronic low back pain and the influence of favorable personality factors in the ability of cases with low back pain to return to work.

JOURNALS

During the past year, the *Journal of Occupational Medicine* was introduced. One of the regular departments in this journal concerns itself with abstracts of the current literature on mental health. This feature is written by Graham Taylor.

FOREIGN REPORTS

Dr. M. R. vanAlphen de Veer(15), Director Social Affairs (Medical Department) Philips, N. V. Philips' Gloeilampenfabrieken, Eindhoven, Nederland reports that on November 19, there will be at the Philips' Glow Lamp Works a symposium on Mental Health in Industry. The state of affairs of mental health in industry in Holland will be chiefly discussed. Two social psychologists will read a paper dealing with the worker, whereas another industrial psychologist and an industrial physician will deal with the problem from the side of the work.

Dr. vanAlphen de Veer mentioned in his letter to me the following books which have been recently published, viz :

1. *De Geestelijke Gezondheidszorg in Nederland* (Mental Health Care in the Netherlands) by Dr. C. J. B. J. Trimbos in which mental health in industry is also dealt with.

2. *Verzuimgeneigdheid bij dienstplichtige militairen in vrede's tijd* (Absenteeism

with soldiers in times of peace) by J. A. C. de Kock van Leeuwen.

3. *De Geestelijke Stabiliteit* (Mental Stability considered under Military Conditions) by Dr. L. Th. H. S. Kortbeek. Dr. van Alphen de Veer states, "this book might also be of interest for industrial psychiatry because it contains a very fundamental study of mental stability in all its consequence."

4. *Samenleving in een technische tijd* (Society in a Technical Time) by Prof. Dr. I. F. Ph. A. Tellegen.

5. *Beeld en Werkelijkheid van de Twents-Achterhoekse Textielindustrie* (The Reality of the Textile Industry in a certain part of the Netherlands) by Th. J. Ijzerman.

Dr. Roger F. Tredgold(16) of London was requested by the federal government of Yugoslavia and by WHO to visit Yugoslavia as a consultant in the field of mental health in industry. His full report was submitted to WHO but a shorter report was published in the last issue of World Mental Health, the quarterly *Journal of the World Federation for Mental Health*. It is titled "Industrial Psychiatry in Yugoslavia." He made the following points, viz :

1. Because of the inspiration and imagination of Dr. Olga Macek, services, which in fact amount to simple psychotherapy on a wide, but necessarily superficial scale, were set up by various industrial doctors in Croatia, notably in Zagreb and Split.

2. In Split, where new industries are arising, each of 10 doctors under Dr. Stipisic has a "Mental Hygiene" room in his surgery, where he can see patients alone, at leisure. Each has had postgraduate psychiatric training and is doing psychotherapy.

3. All those persons he saw in Yugoslavia agreed that neurosis was increasing because, viz : 1. Of a changeover from agricultural life. 2. Of bad housing. 3. Of already existing organic disease which might itself be due to nutritional deficiency or hormonal imbalance, or dust in the environment (asthma) but which was badly treated by doctors with no knowledge of psychiatry, and thus became chronic.

4. Local psychiatrists, experienced in group discussion, join the meetings of industrial physicians and help in training programs for managers.

5. Although highly organized and competent, industry in Slovenia has fostered mostly physical medicine, but a pattern of counseling and "emotional first aid" is developing.

6. In Serbia, there is much interest and work in general mental health and in mental illness and health in industry. Group discussions are developed for managers and workers to work out their problems.

7. Alcoholism is a major problem in Yugoslavia. In one firm there was a correlation between chronic alcoholics and the "accident prone" which suggested that the same type of person might show either (or both) syndromes.

Dr. Tredgold in his letter to me stated the following,

I think it would be fair to say that there is a steady increase of general interest in the field of industrial psychiatry although actual work going on—in clinical practice, research or teaching—depends mostly on a few individuals' initiative in each country. In some cases these are industrial psychologists, in some, sociologists, in some, psychiatrists. Besides this there is certainly some pressure from managers to include psychology or psychiatry in their management training courses which are themselves very much on the increase in Britain. I believe that the trade-unionists are somewhat suspicious of this development on the grounds that they think the management is using "human relations" as a smoke screen to avoid discussing more serious problems, e.g. wages. This is indeed tragic as I believe that psychiatrists have it in their power to help the trade-unionists as much as they can help the management.

At the Annual Meeting of the World Federation for Mental Health held in Barcelona, Spain, in September, a day was given up to the discussion of problems concerning mental health in industry and a working party of some twenty people was formed to discuss this subject throughout the week. Various plans and proposals were made but their implementation, I am afraid, is much hampered by the lack of finance in this field.

Dr. B. Markovic (17), Central Institute of Hygiene, Zagreb, reports he is teaching 4 small groups of industrial doctors (totaling 45) the theory and practice of group techniques.

Dr. M. Hausner (18), Prague, Czecho-

slovakia stated the following facts in a letter:

1. All medical care in Czechoslovakia is entirely free of charge for the patient including hospitalization and drugs.

2. In large concerns, there are staff National Health Centers which have their own neurologist and psychiatrist working for them every week on a part-time plan at least. In small concerns with no specialists, the mental patients are sent to the District Medical Psychiatric Institutions.

3. The Faculty of Hygiene at the University in Prague has a psychiatric chair which sees its main task in studying the mental occupational distortions, in particular of a toxic nature.

4. Working rehabilitation centers for chronic psychotic patients exist. Persons with decreased working ability due to psychiatric defects are cared for by a special committee and suitable work is found.

TRAINING

The National Association for Mental Health has conducted 4 regional training institutes on mental health in business and industry in New Haven, Portland, Milwaukee and New Orleans during this year. Each institute is directed by Harry Levinson, Ph.D., director of industrial mental health for the Menninger Foundation, assisted by local psychiatrists and psychologists. Each institute focuses on the practical application of psychiatric knowledge to human relations in business and industry.

The Division of Mental Health in Industry, Menninger Foundation continues to hold separate training programs for occupational physicians and for executives.

The American Management Association at its Academy of Advanced Management, Saranac Lake, N. Y. has developed lectures on human relations in business and industry and on executive mental health for business and government executives.

Various educational institutions throughout the United States and Canada have held institutes on mental health in industry for management people.

REHABILITATION

The Executive Committee of the President's Committee on Employment of the

Physically Handicapped recently passed the following resolution,

The Executive Committee, noting the growing importance of the employment of persons with histories of emotional or behavior problems requiring special placement efforts, and further noting steps being taken by State Committees, hereby endorses an immediate and detailed study of the problem of incorporating promotional responsibilities for aiding the employment of such persons.

As a result of this resolution, Dr. Ralph T. Collins, a member of the Medical Committee of the President's Committee, was asked to chair a subcommittee of the Medical Committee to make specific recommendations as to how best to carry out the intent and principles of the Executive Committee's Resolution.

In New York State, Governor Nelson A. Rockefeller recently appointed Dr. Ralph T. Collins to the Governor's Council on Rehabilitation. Dr. Collins will represent neurology and psychiatry on the 9-man council.

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SOCIAL PSYCHIATRY

F. C. REDLICH, M.D., AND MAX P. PEPPER, M.D.¹

Thomas Rennie, the late pioneer in this field wrote a 13-page definition of social psychiatry (59) in the first issue of a journal which is devoted to this subject. Our own brief definition, influenced by Rennie, defines social psychiatry as the study of psychiatric disorders and psychiatric therapy, hopefully including prevention, within a social setting. This implies that social psychiatry is defined as an exploration of social systems and culture and their impact on psychiatric phenomena, rather than as a type of psychiatric practice. Obviously, all

psychiatry in relation to institutions—the courts and legal, military, governmental, educational, religious, industrial, community, and psychiatric institutions, *per se*, considered as social systems—would come under the purview of social psychiatry. As progress in these subfields is reviewed elsewhere, we shall attempt to focus on progress in the epidemiology of psychiatric disorders, on work in the areas of social system and culture studies, and on the general topic of personality and culture.

The history of social psychiatry has been reviewed recently by George Rosen (62). Of considerable interest also is a publication

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by the World Health Organization on social psychiatry and community attitudes(65). Talcott Parsons discussed, in a very stimulating article, changes in American society and their bearing on medical education and practice, with special consideration of problems in psychiatry and psychotherapy(52). Of interest also for the student of social psychiatry is the recently published *American Handbook of Psychiatry* containing Edward Stainbrook's paper on community of the psychiatric patient(68) and the article by Paul B. Lemkau(35) on the organization of the community for mental health services. Also in the *Handbook*, Gardner Murphy makes a brief and clear statement about social psychology(47).

During the past year two edited volumes pertaining to the field have been published (46, 69). The source book by Jaco(29) contains very interesting articles by Parsons(57), Eaton(10), Harvey L. Smith (64), and others. The most important collection of papers in social psychiatry is *Explorations in Social Psychiatry*, edited by Leighton, Clausen, and Wilson(34). These papers were mostly the outcome of a conference on social psychiatry sponsored by the Social Science Research Council. Included are contributions by Gruenberg(25), Hinkle and Wolff(28), Kubie (33), Tyhurst(70), Volkart and Michael (71), and others. The international counterpart to the above mentioned volumes is *Psychiatrie und Gesellschaft*, edited by Ehrhardt(11). Another collection of interest is the publication of the proceedings of a symposium on social psychiatry by Pasamanick and Knapp(54).

A number of major epidemiological investigations are under way, but final publication of the major studies in Stirling County, Nova Scotia, and the MidTown Project in Manhattan have not yet appeared as of this writing. In any case, we seem to be much closer to reliable data on prevalence, although true incidence data are not yet available. In the meantime, Malzberg (41, 42) continues to publish on various aspects of mental hospital statistics. A very significant study on the hospitalized mentally ill in the United States was undertaken by Morton Kramer(32). Arentsen and Stromgren, Scandinavian pioneers in the

epidemiology of mental disorders, recently published data on hospitalized patients in Denmark(2). The relationship of bad housing conditions (measured by "lack of amenities") as bearing on the chances of admission to a mental hospital was examined by Lowe and Garrett(39). These authors suggest that such conditions of bad housing may be more important in determining hospitalization rates than social isolation, *per se* (as measured by proportion of single-person households in an area). They differ in this respect with the classic studies of Faris and Dunham, and suggest that these authors overemphasized the factor of social isolation. The changing pattern of admission rates since the turn of the century in England with respect to distribution by sex is also documented by these authors. In most of these studies, the confusion in regard to diagnostic nomenclature is still a major handicap.

A number of papers were devoted to a description of psychiatric patients and to patterns of behavior and mental disorder in various cultures and groups(3, 6, 7, 12, 14, 21, 31, 56, 76). Some of these are thoughtful, like Carstairs', or indicate a thorough acquaintance with the culture, such as Hes' paper. Berne, who introduces the term "comparative psychiatry" as synonymous with social psychiatry, argues against what he sees as the current bias toward cultural etiology of mental disorder, but approaches the problem of morbidity measurements of mental disorder in the Fiji Islands by a statistical *tour de force* based on cultural determinants! Opler wrote a review of the role of anthropology in psychiatry(50), and another collection of papers on clinical studies of culture conflict was edited by Georgene Seward(63). Of more than historical interest to psychiatrists is Margaret Mead's account(45) of the work of Ruth Benedict (author of *Patterns of Culture* and other books) and her contribution to a new approach in anthropology.

The paper by Richard and Katherine Gordon(24) is a study of the impact of the community on the emotional health of children in a suburban town. Many publications have appeared which dealt with problems of prevention and therapy in the

community. In this brief summary, we only mention Margaret Gildea's exploration of a school-centered mental health education project (22) and the Cummings' exciting book (9) on the fate of a community-centered mental health educational project.

In the last few years, there has been a very active interest in the exploration of families of psychiatric patients. Spiegel and Bell wrote a review (67) with an excellent bibliography on the families of psychiatric patients. Nathan Ackerman's book (1) and a collection of papers edited by Jules Masserman (43) represent two recently published volumes on this important subject. The work of Lidz, Fleck, and co-workers has resulted in a number of very significant papers on the families of schizophrenics (15, 36, 37, 38). Wynne *et al.* (72) published an interesting paper, based on the study at the National Institute of Mental Health, of families of schizophrenics.

A very thorough study of social class differences and their impact on the dynamics of the patient and his family was reported by Myers and Roberts (48) in *Social Class, Family Dynamics and Mental Illness*, companion volume to *Social Class and Mental Illness* by Hollingshead and Redlich. Myers and Roberts explored specifically the role of the family and home and the impact of social mobility in the community on the course of disorders of 50 schizophrenic and neurotic patients belonging to social classes III and V. The effect of social class on tolerance of deviant behavior and evidence that the degree of such tolerance on the part of family members is a key factor affecting the course of the mental patient's post-hospital experience has been reported in a series of papers by Freeman and Simmons (16, 17, 18, 19). Performance levels in discharged mental patients are seen as related to class factors and intrafamilial relationships. Though careful not to draw conclusions as to etiology in these studies, the authors make an important contribution to the understanding of social variants in disordered behavior. Closely related to these studies are the reports emanating from the Social Psychiatry Research Unit at the Maudsley Hospital in London. Brown's followup study (4, 5) on a cohort of discharged schizophrenics from the hos-

pital showed the successful outcome (as measured by patients remaining out of the hospital for at least a year after discharge and social adjustment scales) to be related to the type of living group to which the patients went: patients staying with siblings and in lodgings did better than those staying with parents, with wives, and in large hostels. Furthermore, the outcome bore little relationship to the patient's age, recorded diagnosis, or length of stay in the hospital. Careful followup studies such as those mentioned above certainly constitute an important advance in the field of the epidemiology of mental disorder. Another followup study was reported by Hastings on 1,638 patients consecutively admitted to the psychiatric section of a university hospital (26). A long-term followup study was reported by O'Neal and Robins (49).

A comprehensive and thorough epidemiologic study is that of Ginzberg, Ginsberg, and Herma of the Conservation of Human Resources Project at Columbia University on the ineffective soldier (23). In 3 volumes, the records of men who were rejected or prematurely separated from the service in World War II were analyzed, and emotional and social reasons for breakdown and inefficiency were elucidated. The importance of this study transcends military objectives. The strong interest of the military in social studies was also expressed in the proceedings of a symposium organized by David Rioch (6) under Army auspices.

The problem of normality has been a special concern of social psychiatry. It was reexamined in a monograph by Marie Jahoda (30) and also by Redlich (57), who examined the social need for treatment and the relationship of such a need to hypothetical normality.

A major contribution to an understanding of a hospital society is William Caudill's study of a psychiatric teaching hospital (8). Observing and testing staff and patients with great sensitivity, Caudill draws a fascinating picture of the psychiatric hospital. His analysis is concluded with concrete recommendations towards achieving the goal of a therapeutic community within the psychiatric hospital. Wilmer's study of a therapeutic community orientation on a

Naval hospital admission ward(75) is another contribution in this area.

Other papers dealing with social aspects of psychiatry include Pasamanick and Rettig's on the prestige status of psychiatrists (55). These authors found that psychiatrists have the lowest prestige of all physicians. Private practitioners have only a little more prestige than state hospital psychiatrists. Pasamanick and others(53) also found that diagnostic classification depended largely on the orientation of psychiatrists on hospital wards. The adverse impact of cultural attitudes on psychiatric clinical judgment was reported in a paper by Wainwright (73). A social and professional split in the ranks of the psychiatric profession into analytic-psychological and directive-organic practitioners was reported by MacIver and Redlich(40). Redlich also discussed the impact of American culture on analytic therapies(58). An enlightening paper dealing with the effect of cultural variables on the psychotherapeutic process was published by Spiegel(66). Wheelis in a brilliant book(74) described the impact of a culture on its members who have lost their sense of identity and have turned to psychoanalysis in a quest for identity; they become disappointed in their search because analysis cannot provide an ideology. Erich Fromm also dealt in a rather polemic fashion with the problem of values and psychoanalysis in his book *Sigmund Freud and his Mission*(20). Another viewpoint on the cultural implications of psychoanalysis is the scholarly book by Philip Rieff(60). Related to social analysis of psychiatric disorders and practice is the monograph by Fein(13) on the complex subject of cost of psychiatric illness and treatment(8). It is apparent from even such a brief summary of recent progress as this, that many disciplines (anthropology, economics, psychology, psychiatry, public health, sociology) are actively working on the total fabric which we now call social psychiatry.

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CLINICAL NEUROLOGY

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CIRCULATION

Among the causes of cerebral arterial thrombosis, Elliott(30) lists hypertension, diabetes, polycythemia, thrombocythemia, hypercholesterolemia and, in young adults, porphyria. Strokes, like other illnesses which restrict carbohydrate intake, may cause a pseudodiabetic glucose tolerance curve. Thrombocythemia may cause cerebral thrombosis or hemorrhage without signs elsewhere. Before age 50, dissecting aneurysms of cerebral arteries mimic thrombosis(161).

Of 1,018 patients with cerebral thrombosis, 21% died in the initial attack(127). Half of the survivors were dead in 4 years, compared with 18% of a similar general population. Congestive failure, a severe initial attack or an early recurrence were ominous. Among 305 patients with infarcts, those of the brain stem had the best prognosis(95). Prospects for successful rehabilitation are less if the patient was physically inactive before the stroke, has a receptive aphasia, impaired intellect, severe or bi-

lateral signs or infection of skin or urinary bladder(10).

Among 50 patients with confirmed internal carotid artery occlusion, 10 had transient or permanent blindness ; 9, hemianopsia ; 4, pupillary abnormality ; 4, extraocular palsies ; and 2, bruits over the opposite eye (44). In a group of 124 patients, Hollenhorst(62) found lowered retinal pressure in 83 and approximately one-tenth each had homolaterally : retinopathy, less hypertensive arteriolar narrowing, or occlusion of the central retinal artery or a branch. He also describes two patients with cotton wool patches, probably due to ischemic infarcts. Pavlon and Wolff(120) found the homolateral conjunctival vessels dilated and the flow of blood through them so slowed that individual cells could be seen. In contrast to arteriovenous fistula, there was a paucity of minute vessels.

Spalter(142) lists the contraindications to ophthalmodynamometry as retinal disease or high myopia which might cause retinal detachment, recent ocular surgery, central retinal artery or vein thrombosis and glaucoma. A fall in intraocular pressure

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when the systolic pressure is being obtained may cause a return of pulsations and necessitates a ten minute wait between readings. Transient blindness may occur at systolic pressure (103). Readings should be checked 3 times for reproducibility and are more sensitive if they are measured with the patient supine and then erect (138). Measurements were inconclusive in a third of 16 patients with occlusion of the carotid in the neck because of bilateral, multiple or partial occlusions (49).

Arteriography visualizes only the larger vessels. McDowell *et al.* (97) believe it is not advisable or helpful in the usual patient with adequate history and clinical findings of cerebral thrombosis. They report 11 deaths in examining 13 patients who were in a stupor or coma or whose clinical state was worsening. Keirns and White-leather (72) who had only one death and 3 transient hemiplegias following 1,535 angiograms recommend percutaneous injection of only 5 to 7 cc. of hypaque sodium in 1.5 seconds, which is about the normal rate of blood flow. In 628 angiograms, which included the neck, they found the carotid stenosed in 108 and occluded in 21. They recommend endarterectomy for stenosis or thrombosis when the latter does not prevent filling of the siphon via the ophthalmic artery.

Hyperventilation, particularly by artificial respiration causes sufficient vasoconstriction to be clinically effective in lowering acute intracranial hypertension (89).

Anticoagulant therapy of infarcts produced by homologous emboli in dogs did not reduce intravascular thrombosis (122). The infarcts were more hemorrhagic and the mortality rate was higher than in controls. In 55 patients, the outcome was no better with anticoagulants, and one-third bled (4 in the brain) (149). Another 56 patients had no bleeding and were improved slightly (13). A 20% incidence of hemorrhagic complications cause Groch *et al.* (48) to emphasize the warning of a "bloody tap" or xanthochromic spinal fluid. In anticoagulant overdosage (114) one mg. of protamine intravenously counteracts one mg. of heparin. Twenty-five mg. of Phytonadione (vitamin K) intravenously counteracts coumarins in 6 hours, and 50 mg.

acts faster. In emergency, 1000 ml. of plasma (not necessarily fresh) given to a 70 kilogram man raises the prothrombin time from 5% to 30%.

Fibrinolysin (streptokinase), 200,000 units initially and then in divided daily doses is effective if given within 5 days of thrombosis (17, 34, 35). Later, it may be ineffective or cause arterial embolism. It must be followed by anticoagulant therapy to prevent new clots on the damaged intima. Patients must be followed with prothrombin time, fibrinolytic level assays, and semiquantitative fibrinogen determinations. It may cause slight fever, nausea, and vomiting, and rarely, urticaria. Resultant hemorrhagic diatheses may be controlled with intravenous hydrocortisone.

Half of 350 normal brains had anomalies of the circle of Willis (3). At 2,796 routine autopsies, incidental berry aneurysms were found in 137 (16). McKinsock *et al.* (99) retrospectively analyzed their results with 260 patients who had aneurysms and found no significant difference between operated and nonoperated patients. When multiple aneurysms are found, if operation is indicated both sides should be treated. Intracerebral hemorrhages should not be evacuated in older patients (81).

Fifty of 100 cases of cerebral angioma had focal seizures (130). Forty had recurrent headache, half with migraine-like visual phenomena. Calcified streaks were seen in 20, and enlarged vascular channels in 15. None had polycythemia. Pneumoencephalograms in 28 indicated an expanding lesion in half, localized atrophy in one-third and generalized atrophy in two. Root pain was a prominent symptom in most of 19 patients with racemose angioma of the spinal cord (115). One-third had spastic paralysis without deep reflexes. Remissions occurred in 6. All spinal fluids had increased total protein, one was bloody and 5 had a block. A myelogram was diagnostic in 14 of 18.

Good circulation may persist in the legs with an occlusion of the abdominal aorta which causes an anterior spinal artery syndrome below T₇ (20).

Six patients with an air embolism at once became comatose and remained so for two or more days (112). Retinal artery occlusion blinded 3, and one had a myocardial in-

fact. Three developed epilepsy and psychiatric symptoms persisted in all 6.

Sudden blindness in older patients with occlusion of the central retinal artery or its branches is usually due to arteritis and may antedate other symptoms by months. ACTH given on the day of blindness restored sight in every case(119).

INFECTION

A poliomyelitis microflocculation test has been developed(134, 139) which becomes positive in the first few days of infection, rises four-fold, and declines rapidly, so that it indicates current or very recent polio infection. Because of cross reactions between types, it cannot be used for typing. The effect of vaccination on it is not yet known.

Sabin Type II attenuated live poliovirus vaccine was given to 198,965 children in Singapore(53) without untoward effects, and no Type II paralysis occurred. Six cases of Type I polio occurred in contrast to the 179 among 300,000 non-vaccinated children. In a Russian trial(141) there was a better antibody response than to Salk vaccine and no symptoms of lesions of nervous or other organs. Eight passages through susceptible children's intestines resulted in the periodic appearance of strains with slightly higher neurotropic activity for monkeys, but in subsequent passages it returned to the previous level. Similar increases in virulence were observed in a Mexican trial(100) and some serologically susceptible children were resistant to vaccination apparently because current infection with non-polio virus blocked implantation of vaccine virus.

Two patients with proved mumps virus were comatose for 36 and 72 hours, but recovered without sequelae(118).

Downie(26) reviews evidence that Herpes Zoster represents a second more localized tissue invasion by Varicella virus.

Hosty *et al.*(64) have developed a human antirabies gamma globulin which will avoid the risks of horse serum, yet provide immediate antibody to inactivate virus introduced by exposure and protect long enough for active immunization to result.

Amphotericin B, 1 mg. per kilogram in adults, is effective against *Cryptococcus* (96) and Coccidioidal diseases(159). Lumbar punctures should be used to detect

meningitis early. Intrathecal amphotericin 0.7 mg. well diluted, may be necessary every 4 hours at first because of poor passage of amphotericin through the blood brain barrier. The prognosis may be good even though complement fixation titres remain high.

Adding streptomycin to massive penicillin therapy does not improve the outcome in pneumococcal meningitis(55). Early diagnosis is necessary for better treatment. Most deaths occurred when diagnosis was delayed 5 days.

Vomiting was a warning of otogenic meningitis in 38 children where other symptoms were masked by antibiotic treatment(56). Recovery was highest when treatment was given within 24 hours. Of 9 who convulsed, 8 died.

Intramuscular streptomycin and oral isoniazid, or PAS, was the best treatment of 207 patients with tuberculous meningitis(163) both as to survival and residual defects including ocular complications(105). Intrathecal streptomycin was not essential.

Leptospirosis is an increasingly recognized cause of aseptic meningitis(25, 29, 128, 131). *Leptospira* are numerous in the cerebro-spinal fluid during the prodromal period, but are absent 10 days later when the meningeal signs appear. Only agglutination tests will then establish the diagnosis. Icterus may not occur. Conjunctivitis is prominent and there may be a proximal neuropathy. Cells may not appear in the cerebro-spinal fluid for the first week, but then may persist for 5 months.

Prenatal serologic testing for syphilis continues to be necessary, for in the past decade a history of syphilis was obtained in one percent of mental defectives(9). The TPI and antilipoidal reactions in 386 spinal fluids confirm the specificity of the TPI test as an indication of central nervous system involvement by syphilis, but its significance regarding activity is unknown(5). In another 187 patients(77), positive complement fixation tests with *Treponema Pallidum* or Reiter's Protein indicated past or present central nervous system involvement, but not the activity of the process. It should be noted that storage in the deep freeze renders previously reactive fluids non-reactive.

A Lecithin-free cardioliipin antigen for complement fixation is less sensitive for syphilis, but more sensitive to biological false positive (BFP) reactors, e.g. sera from leprosy (131, 132). The BFP reaction is due to certain beta and gamma globulins (102).

Untoward penicillin reactions (50) have increased only due to increased use of penicillin. They are so serious that unnecessary use of penicillin should be restricted. Local toxicity is largely overcome. Systemic toxicity may cause peripheral neuropathy and transient psychosis. Microbiogenically there has been no decrease in sensitivity of *Treponema pallidum*, but there are dangers of superinfection with resistant *Staphylococcus* and *monilia*. Other risks include release of noxious products due to lysis of *Treponemas*. Vitamin B and K deficiencies, and increased susceptibility to polio because of the injection. Allergic reactions of exanthematous, angio-edematous and serum sickness type can be counteracted by penicillinase, 5000 units per 100,000 units of penicillin. Penicillin is undoubtedly the superior antibiotic, but when the above complications proscribe its use, Chlortetracycline, Chloramphenicol and Oxytetracycline may be given, 30 grams p.o. over an eight day period. Erythromycin and Carbomycin are effective in total dose of 20 grams over 8 days (104).

Hahn *et al.* (52A) report on the cooperative clinics study of penicillin treatment of general paresis. Six million units of penicillin is ample treatment. Retreatment is indicated only when the initial course was less than six million units, when temporary improvement is followed by clinical progression or when there are more than 5 cells in the spinal fluid a year after treatment. Spinal fluid pleocytosis at the time of treatment indicates an active process more susceptible to treatment. Improvement may be striking; however, residual deficits depend on permanent brain damage prior to treatment. Prognosis is worse when the psychosis or the neurologic deficit are severe or of long duration. Work status at the time of treatment and the length of time since the patient worked at his usual job are of great prognostic import.

Herxheimer reactions are not reduced by starting with small doses. They are more frequent with spinal fluid pleocytosis. Pre-

treatment with sedation and anticonvulsants is advisable.

Symptomatic management of late syphilis (52) includes bracing, not surgery, for Charcot joints, transurethral prostatectomy for bladder symptoms and Prednisone for nerve deafness of congenital syphilis.

NEOPLASM

Certain astrocytomas are sensitive to x-ray therapy (18). Cerebellopontine angle tumor can cause sudden deafness initially (54).

Multiple myeloma not only causes neutropenia, but also interferes with antibody formation predisposing the patient to pneumonia and meningitis (42).

Fatal intracranial hemorrhage in leukemia is not always due to thrombocytopenia (37). In leukemia (65) the "lymphocytes" in the cerebro-spinal fluid can be seen with supravital stains to be leukemic cells. Radiation therapy is more effective than chemotherapy for cerebral symptoms. An acute disseminated cerebral demyelination is sometimes associated with reticuloendothelial tumors (14, 55). Sarcoid must be added to the tumors causing myopathy (57). Neurological symptoms in systemic lupus erythematosus make the prognosis grave (129).

Instead of neuropathy, bronchial carcinoma may cause depression, intellect impairment and stupor (98).

Metastases to the spinal cord may be accurately located by the accompanying herpes zoster (7). Decompression of spinal metastases is not likely to help if flaccid paraplegia develops in 72 hours, or if sensory loss is complete.

Among 49 patients with hepatic coma, azotemia and oliguria occurred only in those who died. Those in stupor had respiratory alkalosis (148). In dogs, alteration of the pH gradient by respiratory alkalosis increased the ammonia concentration in the brain two or three times normal (143).

Low caeruloplasmin levels have been found only in hepatolenticular degeneration. To account for the wide scatter of caeruloplasmin levels in asymptomatic patients and siblings, Bearn (8) suggests that there are two genetically determined metabolic blocks, one lowering caeruloplasmin and a rarer one which doesn't. He suggests

the use of a chelating agent such as penicillamine. Some patients may require a second chelation therapy. In a review of 100 cases, Wilson (1966) found 24% require the second chelation therapy. Severity of extracerebral lesions to the function of the liver and kidneys is the main cause. In severe extracerebral lesions, the second chelation may result from lack of cerebral clearance of copper in the second chelation cycle. A second chelation is probably due to increased copper in the kidneys but it does not cause any low serum copper in all patients. Chelation therapy may decrease serum copper 20 mg/100 ml to 10 mg/100 ml per day, but from the intestine. BAL helps some patients. Paraformaldehyde is used to remove copper better from liver than from brain. Three cases of granulocytopenia have occurred during paraformaldehyde treatment, perhaps due to pyridoxine antagonism (52).

METABOLISM

In 1966 sural nerve biopsies in diabetes mellitus, intraneural vascular lesions were greater with neuropathy. Neuropathy increased with duration of diabetes, advancing age and vascular change in other organs (2). Optic neuritis developed gradually in 14 uncontrolled diabetics, and control of the diabetes arrested the visual loss in 11 (137). The pupil is usually spared with paralysis of extraocular movements in diabetes. Ocular pain is common (74). Peripheral neuropathy in Cushing syndrome may be related to the diabetes (66).

Paresthesias, burning pains, sometimes radicular, occur in half the patients with idiopathic and radio-iodine induced Myxedema (22). Symptoms are disproportionate to findings. Response to treatment is complete. In 20 cases of thyrotoxic myopathy (59) weakness was proximal in 19. Those without eye signs had a longer course.

In pernicious anemia, visual impairment due to retrobulbar neuropathy may precede other neurologic signs and even anemia, so a Shilling Test is helpful (55). Mental changes due to lesions of the cerebral white matter never preceded cord involvement, but like them did not parallel the anemia (156). Prognosis depends on the duration of symptoms, and there may be relapses with infections. By radioactive tracer methods Grösbek (45) has calculated the B12

deficiency in brain in patients with pernicious anemia.

Patients with Korsakoff psychosis have decreased ability to track movements. Confabulation is not a primary symptom, but results from their forgetting names and at a steeper rate than controls (144). A single, symmetrical sharply outlined focus of myelin destruction was found in the rostral poles of four alcoholics with Korsakoff's. Two of them it had caused rapid, flaccid tetraplegia (2).

Desoxycorticosterone was the only steroid that did not aggravate seizures (60). Acute increases of intracranial pressure cause somnolence, sodium retention and increased steroid excretion (12).

Hypercalcemic states may increase cerebrospinal fluid total protein up to 170 mg percent (27).

Renal tubular malabsorption may cause proximal limb pain and weakness which responds to vitamin D and potassium (62).

Magnesium depletion is an important cause of twitching, tremor and fasciculation in malnourished patients (26). Clinical symptoms correlate better with intracellular (RBC) than extracellular (serum) levels of magnesium. The better treatment is magnesium chloride which ionizes more readily than magnesium sulfate (140).

Serum sodium should be checked daily in unconscious patients, particularly children, because high sodium induces subdural, subarachnoid and intracerebral hemorrhages (90).

The light skin pigmentation in phenylketonuria is of systemic, not peripheral origin (58). The phenylketonuria paper test (Phenistix) with ferric chloride, magnesium and buffer, is effective and simpler than the ferric chloride test (41). Using it, Goldberg (53) found that half the carriers of the gene do not excrete porphobilinogen and during remissions patients may not. Attacks increase in the first trimester of pregnancy and just before delivery, during infections and after barbiturates, particularly those with an allyl group. Tachycardia is a good index of the activity of the disease.

MOVEMENT DISORDERS

Twitchell (146) ascribes athetosis to a cerebral immaturity with inability to sup-

less antagonistic movements resulting from uncoordinated movement and avoiding re-entrant mass movements of neck and hands from one origin and there is a lack of eye-hand coordination.

Prochlorperazine is added to the drugs which cause anticholinergic reactions (117). The different cortical and subcortical electrical effects of chlorpromazine, reserpine, meprobamate and pentobarbital are reported by Kaelber and Correl (71).

Careful initial and followup history regarding vision pain, halos around lights, photophobia, blebs and dimming vision will keep the risk of glaucoma small in anti-parkinson drug therapy (27). The newer synthetic acetyl choline inhibitors have less peripheral but more cortical effect causing hallucinations (123).

Kuru, which principally attacks adult Indonesian women, causing ataxia, tremor and death within a year, is probably due to a genetic factor (38). Pathologically there is widespread neuronal degeneration, myelin loss predominantly in spino-cerebellar and corticospinal tracts, an intense astrocytic and microglial proliferation, scattered perivascular cuffing and in half the cases anisotropic plaques (75).

Acute cerebellar ataxia of children, if severe at onset, may last for years (155).

Rhythmical myoclonus can originate from the brain stem or the spinal cord (91). The many sites of tonic and clonic head movements are reviewed by Mettler (101).

OTHER CENTRAL NERVOUS SYSTEM CONDITIONS

Additional acrocentric chromosomes in the smallest size range in Mongoloid children suggests that the primary disorder is one of oogenesis (83, 36, 69).

A special number of the *Acta Neurologica et Psychiatrica, Belgica*, has been devoted to multiple sclerosis (1). Plum and Fog (124) in a detailed chemical comparison of 78 patients and 49 controls found in the cerebral spinal fluids an increase of total protein in 50%, and of gamma globulin in 65%. Cholesterol also was increased. Green *et al.* (46) found the latter in a number of other conditions, but only in multiple sclerosis was the ester over 60% of the total cholesterol. On electrophoresis of serum of multiple sclerosis patients, total protein was

lowered in the majority, albumin was lowered in all and there was a relative increase in gamma globulin. Two globulins proportional to the duration and stage of the disease were found. A 1.5 degree centigrade increase of body temperature caused 15 of 14 multiple sclerosis patients to develop symptoms (111). Waters (141) reports a temporary raised temperature at onset only while the body temperature was lowered one degree.

Quantitative assay of compounds in isolated fresh nerve axons and cells from centrally and stimulated cerebellar granular cells denote energy or loss to the nerve cells from axons (15).

Hemispherectomy (154) including corpus striatum, thalamus and hypothalamus in monkeys caused loss of fine movements but not of standing walking and climbing. It also caused contralateral anaesthesia except for pain which could still be localized on the face. The degree of impairment of the "highest integrative activities" of man is a function of the total number of cortical neurons damaged, not their site or degree of dispersal (15).

Auditory illusions are usually caused by bilateral temporal lesions, visual illusions by nondominant temporal lesions (108).

Changing direction of joint movement causes a reciprocal shift of activity of adjacent post central gyrus neurons (106). There are cortical and subcortical inhibitory mechanisms improving touch discrimination (107). The superficial abdominal reflexes are polysynaptic spinal reflexes influenced by cerebral and spinal effects on the internuncial neurons (79, 51).

The spinal cord should be explored and electrically stimulated in traumatic paraplegia (109). When transection is partial, procaine injection of peripheral nerves, under direct vision, may relieve mass reflex spasm (110). Spinal alcohol injection is condemned.

CRANIAL AND PERIPHERAL NERVES

An attack of trigeminal neuralgia is precipitated by a summation of touch stimuli and is followed by a relatively refractory period which can be increased by hydan-toin (79). Except in the rare instances when it is due to multiple sclerosis or

tumor of the middle or posterior fossa, it may be relieved in 73% of patients by "decompression" of the root as it crosses the apex of the petrous temporal bone (40). Costen has reviewed the causes and treatment of his mandibular joint syndrome (21).

All but 2% of patients with Bell's palsy recover well, operative risks of decompression are greater than this. Exercise should be prohibited until voluntary movement begins. Decompression should be reserved for those who fail to show any recovery after two months (157) even when the paralysis is secondary to basal skull fracture (86). Treatment with split hypoglossal grafts was successful and free of complications in 11 of 14 patients (73).

Microelectrode study indicates that sounds are localized by special units of the accessory superior olivary nuclei (39).

Ultrasonic treatment can destroy the whole labyrinth relieving Meniere's attacks without deafness (4).

Peripheral entrapment syndromes of the upper extremity have been reviewed by Thompson and Kopell (145).

MUSCLE

Myasthenia gravis in 4 boys whose parents and sisters were normal suggests that the genetic factor is a sex linked recessive (151). Impaired progesterone metabolism to pregnandiol in myasthenia is restored by thymectomy, indicating an effect on the liver (135). At death, 5 myasthenic patients histochemically had almost no acetylcholinesterase inhibition, despite large ante-mortem doses of neostigmine, indicating an additional action of neostigmine (19). That this action is one on membrane function is suggested by the potentiating effect of veratrine which causes a slight net loss of potassium from the muscle (61).

In the treatment of myotonia, quinine was least effective, prednisone more effective, and procaine amide most effective (but the latter may cause agranulocytosis) (87). Potassium binding exchange resins have lessened myotonia in 6 cases (68, 146).

A reversible proximal myopathy due to steroids (158) is not due to potassium loss (121).

Use of short acting muscle relaxants (suxamethonium compounds) is followed

in a third of the patients by transient muscle pain and stiffness so severe that polymyositis or meningitis may be considered (82).

PROCEDURES

Because sudden death immediately after tracheotomy is due to rapid reversal of the pre-existing respiratory acidosis, giving oxygen alone is dangerous, and vasopressors should be at hand (47). Chest x-ray before tracheotomy in infants is more reliable than recourse to an age table of crico-carinate distance, and prevents the pulmonary complications of a long cannula (160).

Cineradiography helps to clarify the reason some patients have difficulty with glossopharyngeal breathing and correct it (92). Radiologic and neurologic manifestations of spondylosis are reviewed by Epstein and Epstein (31) and the x-ray changes of carniopharyngiomas by Barnett (6).

Complications, other than headache, of lumbar puncture when cerebro-spinal fluid pressure is increased, are below 1.2% and actually are much more frequent when there is no papilloedema (78).

Discography is not superior to myelography, but may be a useful supplement (116). Repeat myelograms were done in 38 patients because of postoperative recurrence of symptoms (136). Operation confirmed a new disc at a new level in 5, and a recurrent herniation at the old level in 11 of the 16 who had defects. Nineteen of the 22 whose myelograms were normal gradually recovered without operation.

Air embolism complicating pneumoencephalography need not be fatal (70). A short bevel needle lessens the chance of the opening being half in a vessel. A stethoscope over the heart during the injection of the first milliliters of air permits one to hear the "mill wheel" murmur of air in the ventricle before a fatal quantity of air has been injected. Injection is stopped and the patient is turned onto his left side in steep Trendelenberg so that the bubbles are trapped in the apex and circulation is maintained. The air and frothy blood can then be aspirated by a needle inserted in the right ventricle.

Dog experiments demonstrate an almost all-or-none effect of exposure of the vascular bed to toxic concentrations of contrast

media(93). Even maintaining adequate intervals between injections of small volumes of dye, Brendler and Hayes(11) limit angiography in patients likely to have atherosclerosis or over 50 years old. Although angiography is relatively quick and safe, 75% accurate in localization and by vascularity gives some evidence of tumor type, it may not indicate the full extent of a tumor and may fail to demonstrate an occipital, parietal, deep central or small tumor(113). In agenesis of the corpus callosum, the anterior cerebral artery shadow is more vertical and turns backward sooner(63).

A new technique of echoencephalography permits identification and demonstration of displacement of the pineal, whether or not it is calcified in adults or children(84).

Failure of the foetal innervation of muscles results in a distinctive electromyogram with small fibrillations and a hyperirritability to mechanical stimulation causing positive sharp waves(94). Two days are needed for electromyographic changes to appear after a ruptured disc(76).

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ALCOHOLISM

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An important re-evaluation of the Jellinek formula appeared in the June issue of the *Quarterly Journal of Studies on Alcohol*. Lin Sorey (1) states:

A logical demonstration, believed to be convincing, is made that the present most commonly used method of estimating the prevalence of alcoholism is in error to so serious an extent that assertions as to "the magnitude of the problem" are misleading and scientific studies based on these data, quite probably, invalid.

Jellinek (2) himself agrees with Brenner's criticism of PD in the numerator of the "Jellinek formula" and concludes,

Generally, I would not be in favor of the continued use of my formula, nor of any modification of it as there are too many fluctuating factors present. Much more to be desired is a new basis, and particularly actual field surveys.

A group (4) investigating the low level of serum magnesium in patients with delirium tremens and alcoholic hallucinosis reports that because sweat contains an extremely high concentration of magnesium, severe sweating in delirium tremens may be a significant factor affecting serum magnesium concentration. Upon cessation of symptoms, serum magnesium levels rose in every case, regardless of initial levels. The authors speculate as to whether the deficit results from, or causes delirium,

increased psychomotor agitation, disorientation, hyperhydrosis and hallucinations.

Clark and Halpieu(5) found that in 56 dogs, 100-125 mg. of animal charcoal per kg. of weight produced sensitization to alcohol comparable to that produced by 0.5 to 1.0 mg. per kg. of sodium carbonate and 5.0 to 10.0 mg. per kg. of disodium. In another research experiment 61, 3 of 4 groups of rats on a nutritionally adequate but calorically deficient diet were given varying amounts of sucrose supplement and a fourth was given a 15% alcohol solution instead of drinking water. From a checkup of the rats' caloric intake and rate of weight gain, the authors conclude that all the energy present in alcohol appears to be available in the animal body for growth. In a study of water- and alcohol-drinking habits of rats, the same team (7) noted that only 5 of 25 rats made consistent choices when the drinking dish location was varied because the rats' drinking preferences were influenced by their being either right- or left-pawed. They concluded that "had we not become aware of the importance to some rats of the location of the fountains . . . we might have inadvertently attributed the differences in alcohol intake to some genetic factor." Moving the alcohol dispenser cured some rats' "alcoholism." In another study (8), alcohol ingestion in mice was found to increase following administration of sodium chloride, which may be related to a secondary response due to liver dysfunction. Ditman and Mooney (9), studying the effects of phenyltoloxamine

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(11, 8) is, in alcoholics, alcohol and no longer the essential HN treatment, placebo.

As a result, the one on the combined use of alcohol and placebo had the full effect of alcohol and chlorpromazine (10). It is stated that in combination with alcohol, both drugs potentiated the effects of alcohol. The combined effects of both drugs on alcohol and of either drug were greater than those following a single full dose of alcohol.

It seems consistent, considering the controversy about the value of insulin in the treatment of acute alcoholism, that alcohol metabolism was 21% higher in those subjects given insulin and 19% higher in those given insulin plus glucose, than in controls (12). Also of interest are Lundquist and Wollers' conclusions (13) that the average rate of alcohol elimination in man is increased 6% after glucose administration and by 34% after fructose.

Partridge (14), in England, advocates chlorpromazine or promazine and so-called modified insulin treatment for controlling delirium tremens and suggests that modified insulin treatment is also valuable for detoxicating the alcoholic who remains short of delirium. He suggests vitamin dosage given intravenously, added to an intravenous infusion of 1,000 to 2,000 ml. of 10% dextrose in normal saline containing also 30 units of insulin. Allgen *et al.* (15), obtained excellent results in the treatment of 7 patients with severe delirium tremens with Viadril, whose only complication was thrombophlebitis in recipient veins. According to Kolman (16), the treatment of 114 alcoholics receiving perphenazine proved more satisfactory than that of 163 receiving reserpine because of the potent action and lack of side effects of intramuscular perphenazine in short-term therapy. Nocturia was found to be a distressing side effect of temposil in one report (17). In Glatt's (18) comparative study of disulfiram and temposil, on the whole the reactions to temposil were much less severe than to disulfiram, but the administration of temposil tests in an outpatient clinic seemed risky because of possible craving reactivation. Glatt suggests that choice of drugs may depend on the individual patient's personality; he recom-

mends temposil for the "A.A. type" and disulfiram for the "problem drinker."

Cooper (19), since 1957, has been conducting a modified insulin regimen with a constant treatment program for alcoholism. It includes an outpatient clinic, home, a medical consultation in hospital, and agreements with the medical authorities, departments in charge of the police, and the outpatient medical treatment clinic and TB treatment to treat all chronic conditions. The treatment system for a 4-year period shows that 84 of 144 patients were recovered. Other large British towns have established treatment centers with outpatient treatment practices.

Outpatient treatment in France (20) under difficult conditions and without the public health authorities' cooperation, consists of alcoholized penicillin therapy supplemented by Antical (penicillin), sodium thiosulfate, and large doses of vitamin B and C. Heslin's (21) 5-year follow-up study in 1955 showed one-third of the outpatients were "socially useful."

According to an abstract (21) from the 1956 Russian medical congress, the total alcohol consumption in Russia per capita in 1948-50 was 84 less than in 1940 and much lower than in capitalist countries. The Moscow traffic regulations division showed that 27% of accidents involving pedestrians in 1953-54 resulted from pedestrian intoxication and 17% of traffic accidents resulted from driver intoxication. Drunkenness constitutes no mitigating circumstance for any crime and increases the responsibility in motor accidents. Hypnotherapy and conditioned-reflex therapy are emphasized. By official estimates, alcoholics, mostly chronic alcoholics without psychosis, occupied 2% of psychoneurologic institution beds in the 1950-55 period.

Because of the high incidence (25%) of ulcer histories in 600 male alcoholic patients, an Austrian investigator (22) considered the "most substantial link between alcohol and stomach ulcer . . . a common psychodynamic factor," and addiction following gastric surgery a displacement of symptoms.

In a re-evaluation of the familiar statistics about annual loss of time and high accident rates among problem drinkers,

2 investigators, 231 compared 3 groups, 1 of 48 problem drinkers and 2 control groups, whose average tenure was about 28 years in a large U. S. company. Overall, the problem drinkers were absent 2.5 times as many days, cost 3 times as much in sickness payments and had 3.6 times as many accidents as did the matched controls.

The Uniform Vehicle Code, Model Chemistry Test Law defining drunkenness by weight of blood alcohol was used in 27 states as of July 1, 1957. The definition is : at or below 0.05%, the defendant is not considered drunk ; at over 0.05 but under 0.15%, he is not presumed to be drunk but the findings may be considered in determining his guilt ; and at 0.15% or above, he is considered drunk. In a study(24) of all single vehicle fatal accidents in Westchester County for a year's period, 49% of the fatalities had 0.15% blood alcohol levels at death ; 20% had 0.05 to 0.15% ; and 27% had no blood alcohol. The authors conclude that alcohol usage was probably a causal factor in the deaths of one half or more of the drivers killed in single vehicle accidents in that county over an 8-year period. From these data and a similar Delaware police study, in which 10 of 15 fatally injured drivers had 0.15% or higher blood alcohol levels, they suggest that the high alcohol levels observed in this type of accident may exist in other U. S. sections.

The San Francisco Community Health Services Committee(25) urged that coverage of hospital and follow-up outpatient treatment for alcoholics be studied by companies offering group health insurance. One Blue Cross contract, covering the C & H Sugar Refining Corporation and the Refinery Workers union, already includes alcoholic care if provided in a general hospital.

The September issue of the *Quarterly Journal of Studies on Alcohol* presents substantially the same papers that were read at the October 1958 Research Conference on Problems of Alcohol and Alcoholism.

The Alcoholism Research Foundation of Ontario(26) recently published its first extensive statistical report of alcohol use and alcoholism in Canada from 1871 to 1956. Although the prevalence figures are based on the Jellinek formula, other figures regarding alcohol consumption, the size and

characteristics of the drinking population and convictions for offenses involving alcohol are not affected.

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GERIATRICS

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The WHO advisory group on public health aspects of the old, recently recommended various provisions for the tremendous increases, proportional and absolute, in aging populations. Japan has had the largest proportional increase. In Russia the average life span has more than doubled since 1917; Khrushchev's average contemporary will die at age 67. The U. S. Social Security Administration began late in 1959 a semiannual count of centenarians on the old-age and survivors' insurance rolls; the last count, in 1950, showed 4,474 centenarians.

Various ataractic drugs reported on favorably in the treatment of fairly large series of elderly psychiatric patients under controlled conditions, and without undesirable side effects, include hydroxyzine, buclizine, and methylphenidate hydrochloride. Tranquilizers were successfully combined with a vitamin-hormone stimulant (Ritonic) and with a nutritional-hormone supplement (Neobon).

Poor results were also reported. A variant of diphenhydramine hydrochloride (Covatin) was ineffective in 14 elderly female patients treated for 8 weeks, as was oral pentamethylenetetrazol in 44 senile patients treated under control conditions. Procaine hydrochloride, praised as a Roumanian wonder drug, was found to be no panacea, but merely a mild activator of the pituitary-adrenal system. The use of Tofranil (250 mg. daily) in 6 elderly psychiatric patients was followed by a sudden reaction, with coarse tremor in all limbs, present even at rest. The tremor cleared quickly upon withdrawal of the drug, which was resumed in lower dosage.

Reports by Chow(1) and by Droller and Dossett(2) indicate that vitamin B₁₂ deficiency may be a cause of senile dementia and confusional states. Settel(3) found a mild to moderate protein depletion and negative nitrogen balance in 32 geriatric patients (aged 62-89) studied for 8 to 10 months.

Birren(4) reported among the results of an intensive study of 59 men aged 55-65, living in the community that age was not necessarily accompanied by a change in the cerebral blood flow and cerebral metabolism; and that the demonstrable changes in mental abilities were much smaller than those previously reported. According to an extensive review(5) of current trends in problems of the aged, in general, the majority of the biologic, genetic, cultural and psychologic factors favor females over males in health and longevity.

According to a study(6) of 3 groups of men divided into age levels from 30 to 60, the serum cholesterol level, the frequency of arcus senilis and the incidence of coronary artery disease were much higher in the group who had an intense drive for achievement and were continually involved in competitive efforts, than in those characterized essentially by the converse pattern.

An extensive review(7) showed increased use of psychotherapy with geriatric patients; supportive approaches and active therapy predominated over insight therapy. In the few reports dealing with group psychotherapy, results were more systematically evaluated than in individual therapy, perhaps because of rather large samples of institutionalized patients and controls. Rosenthal(8) reported successful psychotherapy of about 30 elderly patients, most of whom were treated just like younger patients. Both writers advise extensive research into the idea that persons beyond a certain age (say, 40) are not amenable to psychotherapy.

The standard for performance by older people on the Wechsler Adult Intelligence Scale (WAIS) was established on 352 subjects in metropolitan Kansas City. This standard, tentatively accepted by Wechsler as a national norm, was tested by Eisdorfer *et al.*(9) on 130 normal subjects, aged 60-75, and on 32 mental hospital patients in North Carolina. Since the results—a higher Verbal than Performance IQ score in 82%, except for the hospitalized group aged 70-74—

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contradict the Kansas City norms, the authors question the generality of this sample as the basis for national norms.

Owens(10) reexamined Army Alpha test scores collected in 1950 on 127 men who had taken the test as college freshmen in 1919. Both increases and decreases in scores were observed, but the changes from age 20 to age 50 were unrelated to initial ability levels. Hence Owens concludes that age is not kinder to the gifted few. No data exist as to the relationship after age 50.

A paired-associate learning test(11), given to 18 elderly psychiatric patients and a control group, was found to be sensitive to memory impairment, without dependence on intellectual functioning; problems of standardization were being investigated.

In a comparative performance test on older and younger subjects, Griew(12) presented stimuli from varying numbers (up to 8) of signal sources for simple reaction time. The performance of younger subjects did not seriously deteriorate until the number of signal sources reached 8, while that of older ones deteriorated when the number of alternative sources was increased from 1 to 2.

A few interesting plans concern retired professional persons. The American Association on Emeriti has listed about 13,000 emeriti, for whom employment or other benefits are sought. The entire full-time faculty of Hastings College of Law, San Francisco, are emeriti from famous law schools. Increased use of retirement-age professors has been recommended by several educational committees. This past year Judge Learned Hand, at age 87, completed 50 years' service as a Federal judge.

The AMA has urged physicians to adjust

fees for medical services and to encourage the development of suitable prepaid health plans for those over age 65. California Physicians Service recently adopted MD-Plan 65, designed to carry out these recommendations. About 33 states reported progress in elderly health care. Several writers have noted that many expenses listed as medical care really involve expenses of housing, food service, and home nursing care.

In the Scandinavian countries—67 is the national pension age—350 new homes for about 15,000 aged persons have been built in the past 10 years. A new career, with good pay and ample living quarters, for suitable women is that of director of an old age home, based on a 2-year training.

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EPILEPSY

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PHYSIOLOGY

There is increasing evidence that the neurophysiological bases of seizures involve: a synchronization and an increase rate of firing of neuronal units and some

active relationship between excitatory and inhibitory processes(1, 2, 3, 4, 5, 6, 7, 8, 9). Cortical discharging foci may persist and propagate independent of any subcortical influence(10, 11) although some subcortical regions, particularly certain medial thalamic areas, can exert a marked in-

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fluence on these cortical foci(12, 13, 14, 15), also, other brainstem areas may produce tonic seizures independent of cortical involvement(16, 17).

BIOCHEMISTRY

The metabolic steps of the glutamic acid-gamma aminobutyric acid (GABA) cycle appear to be fairly well accepted: glutamic acid to GABA by the action of glutamic acid decarboxylase (GAD) plus pyridoxine; GABA plus alphaketoglutaric acid by the action of a transaminase plus, again, pyridoxine to succinic semialdehyde; then by a dehydrogenase(18, 19, 20) to succinate and then to glutamic acid. This succinate path is sufficient to account for all the GABA catabolism(21). Pyridoxine antagonists can cause seizures(22, 23, 24) which are stopped by the administration of B₆. The comparative distribution of the transaminase and GAD is such as to suggest that the GAD is the limiting factor(25). The catabolic limb of this cycle involves a portion of the citric acid cycle; hence, it is suggested that the GABA cycle is primarily a regulator for available energy(26). Considerable doubt has been cast on GABA being the inhibitor neurohormone(27, 28, 29, 30) although most evidence points to it or some other naturally occurring amino acid having important inhibitory and/or excitatory effects on neurons(23, 31, 32, 33, 34, 35, 36, 37, 38). Its actual mechanism remains theoretical(39, 40, 41, 42).

Other biochemical studies report that: increase seizure susceptibility is inversely related to the ratio of extracellular to cellular sodium, directly related to the ratio of cellular to extracellular brain water and related to the rise in brain carbonic anhydrase with age and a reciprocal fall in total brain carbon dioxide(43); after an initial rise, the brain cholinesterase falls again as the animal ages(44); and GABA has an antagonistic effect on serotonin, at least in the guinea pig ileum(45).

PHARMACOLOGY

Dilantin unlike Spirodione, Tridione or phenobarbital has no effect on primary seizure foci but it, like Spirodione and phenobarbital, does limit cortical spread of sei-

zures(46). Although Dilantin has no effect on carbonic anhydrase, it has an additive effect with and is similar in raising threshold in hyponatremic mice as the carbonic anhydrase inhibitor methazolamide(47). Dilantin, Thianton, Mesantoin, and Tri-dione in chronic(48) and acute(49) doses produces a reduction in brain acetylcholine. A single intravenous dose of Dilantin has its maximum effect in 15-30 minutes and then slowly falls off so that it is without effect after 8 hours(50). Diamox enters the brain first via the cerebrospinal fluid and is only later transported across the blood-brain-barrier(51). Brain carbonic anhydrase may not be directly involved in the persistence of methazolamide's anti-convulsant action(52).

PATHOLOGY

Several pathological reports again stress the importance of lesions in Ammon's horn or the "entorhinal" area in psychomotor epilepsies(53, 54, 55, 56, 57, 58, 59, 60) although it is not settled whether the Ammon's horn lesions are primary or secondary(61).

CLINICAL

Mullan and Penfield conclude that generally, visual illusions or the sense of familiarity arise from the minor temporal lobe while auditory illusions and a sense of fear may arise from either temporal lobe(62). Paroxysmal disturbances of body image may be associated with frontoparieto-temporal lesions on the minor side(63). Experimental "psychomotor" seizures can be elicited from stimulation of the anterior or posterior limbic lobe(64). The precise pattern of a focal motor seizure is determined partly by anatomical location of the focus (and this may be at a considerable distance to the motor area) and by the parameters of stimulation(65). Nocturnal seizures are more frequently associated with medio-basal hippocampal foci than foci over the convexity(66). There was a positive family history in 12.5% of patients studied for a single seizure(67) and in 15% of patients with petit mal or 9% with focal seizures(68). Based on the incidence of epilepsy in Rochester, Minnesota, the estimated prevalence in the U. S. is 522,000-757,000

(60). The risk of having a "cryptogenic epileptic" child is increased in older primiparas (70). Four series (71, 72, 73, 74) reviewed 1,310 epilepsies of late onset. Convulsions in newborns (75) and cases with "hyposarhythmia" (76) were reviewed; both carry poor prognoses. The height of the fever rather than the rate of rise may be the important factor in febrile convulsions (77). Antipyretics, particularly amidopyrine, may be analeptic (78). Seizures may precede the diagnosis of brain tumor by many years (79). A number of cases of musicogenic epilepsy or related phenomenon are reported (80, 81, 82, 83, 84) as are patients with photosensitive epilepsy (85, 86). Five cases of "epileptic cephalaea" are reported (87). Among reports of interesting cases of epilepsy are: 4 cases with paroxysmal "hypersexuality" with temporal lobe foci (88), epilepsy in one Siamese twin (89), nystagmus associated with psychomotor and focal seizures (90), familial epilepsy, albuminuria, and aminoaciduria (91), and familial epilepsy with aplasia of the corpus callosum (92). Differentiation between "anoxic convulsions" and epilepsy in children (93), temporal lobe and petit mal epilepsy (94), hypoglycemia and epilepsy (95), and vestibular seizures due to temporal cortical foci and vestibulogenic seizures due to stimulation of vestibular nuclei (96) are discussed. There is a high correlation of breech deliveries with idiopathic epilepsy but not with epileptics having focal EEG abnormalities (97). Some other correlations are: 22% of 370 cases of cerebral palsy have convulsions (98); about 50% of patients with cerebral abscesses develop convulsions (99); 18% of children with supratentorial brain tumors (100) and 16% of patients with glioblastomas (101) have convulsions as their initial symptom; convulsions may occur very early—7 weeks of age (102)—and are frequent in children with cerebral angiomatous malformations; seizures are the initial symptoms in 44% of cases of porencephaly (103); 5.6% of cases of closed brain trauma develop epilepsy and this usually begins one-half to one year after the injury (104); 20% of patients with hypertensive encephalopathy (105), 20% of patients with carotid insufficiency (106), about 4% of patients with con-

genital or acquired aortic stenosis (107) and 55% of patients with spontaneous intracerebral hematomata (108) have seizures; 95% of cases of Lissauer's paresis (109) and 21% of patients with various types of neurosyphilis (110) have seizures; convulsions are relatively common in cerebral paragonimiasis (111), exanthema subitum (112), and during the acute stages of Western Equine encephalitis (but not as a late sequelae) (113); about 3-4% of children with seizures also have migraine (114); seizures are uncommon as a neurological complication of leukemia (115); 18.2% of patients with systemic lupus erythematosus have convulsions (116); 18% of post-prefrontal lobotomy (Freeman and Watts) who are still alive have had convulsions (117); 6% of patients with acute intermittent porphyria present with seizures (118); convulsions occur in 39% of cases with congenital toxoplasmosis (119); hyperinsulism though often thought of in the differential diagnosis of seizures, is actually the cause in less than 0.1% (120); 12% of cases of Cocksackie B in newborns have seizures (121); and 70% of cases of idiopathic hypoparathyroidism and 65% of cases of pseudohypoparathyroidism have convulsions (122). Among the rare causes of seizures are instances of hyperserotonemia (123), a "cerebral salt-wasting" syndrome believed due to sustained inappropriate release of antidiuretic hormone (124), pyridoxine-dependency (125) and a retained intracranial sewing needle that had been used in an attempted infanticide (126). Epilepsy associated with menstruation, pregnancy, puerperium or the menopause is discussed (127, 128, 129, 130); estrogens may increase irritable foci (131). A B-6 deficiency may be the etiology of "rumfits" (132); 45% of epileptics are reported to have a B-6 deficiency (133).

The value and dangers of pneumoencephalography in epileptics are discussed (134, 135, 136, 137). Epileptics have normal cerebrospinal fluid transaminase (138), cholesterol and cholesterol esters (139), and total calcium, chloride, potassium, sodium, magnesium, and inorganic phosphorus (140). Decrease serum mucoproteins may be found in patients with progressive familial myoclonic epilepsy (141). Many epi-

leptics have hyperactive thermal vestibular responses(142).

TREATMENT

New anticonvulsant drugs are: indolyl-cholperidines which may act like serotonin(143); ethchlorvynol, a tertiary alcohol(144); Phenylglycidol, a substituted ethylene glycol(145); Elipten, a glutaride(146, 147); quinaquine and chloroquine(148, 149); PM 671(150) and PM 680(151); new succinamides; Ethoxzolamide, a carbonyl anhydrase inhibitor(152); and Nydrane, a benzylamide(153). Results with Celontin(154), Trinuride(155), Hibicon(156), meprobamate(157, 158), ketogenic diet(159, 160), Diamox(161, 162), Dexadrine(163, 164), intravenous Xylocaine(165, 166), intravenous Dilantin(167), tubocurarine (for status)(168), and thymus extracts(169), are reviewed. The use of ipronazid is suggested(170, 171) which is interesting in light of convulsions being one of its known side effects. ACTH is of value in the treatment of "Gibbs' hypsarhythmia"(172, 173, 174).

Toxic effects of Dilantin are reported as not being seen when the blood levels are less than 30 micrograms/ml.(175). Megaloblastic anemias due to some anticonvulsants are associated with normal serum B-12 levels(176) and normal absorption of folic acid(177); Dilantin may produce meningismus and a cerebrospinal fluid pleocytosis(178) or a parenchymatous cerebellar degeneration(179); Mesantoin may produce a clinical picture resembling infectious mononucleosis but without a raised heterophile titer(180); anticonvulsant drugs may mimic malignant lymphomas clinically and pathologically(181); Paraldione(182) or Tridione(183) may cause a nephrosis; Mesantoin was considered responsible for the aplastic anemia in 3 out of 89 cases(184, 185); experimentally, meprobamate may produce seizures after withdrawal(186); cessation of prolonged induced sleep for the treatment of mental disorder has been followed by withdrawal convulsions(187). Among unexpected side effects of some anticonvulsants are: decreased typhoid agglutination titers after the administration of some barbiturates(188), an antithyroid activity of thiohyd-

antoins(189), and a lowered oxygen consumption after administration of Diamox which is taken as evidence of antithyroid activity(190). Small doses of various phenothiazines given for a short period of time can produce "seizures"(191, 192, 193, 194) although these actually may be acute dystonias rather than epileptic seizures. In regard to the treatment of the various toxic conditions, antihistamines are reported again to be without value in Dilantin-induced gingival hyperplasia(195), intravenous Tridione relieves seizures associated with severe Dilantin intoxication(196) and hemodialysis has been used successfully in the treatment of extreme Dilantin poisoning(197).

The results of hemispherectomy(198, 199) and electropallidotomy(200) are reported. A number of papers discuss the surgical treatment of temporal lobe epilepsy(54, 58, 59, 201, 202). There is frequently an improvement of the personality along with improvement of the seizures, particularly in patients with aggressive tendencies.

PSYCHOLOGY AND SOCIOLOGY

The nature of epileptic interference with psychic function has been studied experimentally(203, 204). Certain psychological characteristics of epileptics are examined(205, 206, 207, 208, 209, 210). There may be greater disturbance in vocabulary than with abstract ability regardless of which temporal lobe is involved in psychomotor epilepsy(211). No changes in general intelligence or learning after temporal lobectomy on the nondominant side has been found in contrast to a decrease in auditory verbal learning ability if the dominant lobe was involved(212). Some psychological factors involved in bizarre seizures(213), the occurrence of autoscopic phenomena in some epileptic attacks(214), the value of recall during sodium amytal interview as a diagnostic aid in seizures(215) and the value of group meetings of families of epileptics(216) is considered.

The English laws regarding epilepsy and annulment of marriage(217) and some medico-legal aspects of epilepsy in the U. S.(218) are discussed. Of Norway's 20,000 epileptics, 50% are working(219). In the

Mayo Clinic's series of epileptics, 19% have made "superior" adjustments, 68% are self-supporting, 9% are partially dependent, and 4% are totally dependent: adjustment is not altered by type, frequency or duration of seizures(220). Exception has been taken to the admission of two more persons into the club of famous epileptics, Emperor Caligula(221) and St. Paul(222).

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PSYCHIATRIC SOCIAL WORK

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Psychiatric Social Work continues to extend significantly, its services in the field of mental health, and to clarify and define areas of practice through experience and study. These areas range from the conceptualized roles in working with mentally disturbed patients in individual treatment, to leadership as consultants and directors in the development of broad mental health programs for prevention and treatment. Throughout, the patient is envisioned as a family member in a social community. Thus, in keeping with the interest of this profession in treatment of psychiatric maladjustment as well as in the prevention of illness, the roles now extend from that of casework therapist to community organizer for mental health.

Two areas within which psychiatric social work is progressing rapidly, are group therapy and social research. After years of training with psychiatrists in

group dynamics, beginning as members of a group, then as observers, co-leaders, and leaders with psychiatric consultation, workers have gained confidence in dealing with complex multiple transference and countertransference elements. They now are able to facilitate group movement for more adequate social readjustment. The limited number of psychiatric social workers in relation to the current demand within the rapidly mushrooming mental health programs is giving impetus to the use of group process. The skilful application of the techniques of group dynamics enables each worker to make better use of himself as a catalyst, not only in work with patients toward health, but also in such roles as consultant or mental health organizer, in motivating groups to work together for community programs(1).

The responsibility of a professional group to test the effectiveness of the underlying principles and techniques of its accepted practice, is now being assumed more actively. Supplementary advanced training in

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research methods is available through in-service training, post graduate third year and doctoral levels. Social workers are participating in the varied research projects of many psychiatric clinics and hospitals in collaboration with psychiatrists, psychologists and members of other disciplines. Follow up studies evaluate the social readjustment of specialized patient groups selected frequently either by diagnostic or treatment categories. Research concerning the professional practice of psychiatric social work, itself, also is being conducted. The many intangibles and variables present in multiple human reactions create obvious difficulties for objective study which, we hope, will be surmountable. Through structured research design, the purpose is the isolation and testing of certain basic concepts underlying interpersonal therapeutic casework relationships to enhance and improve practice.

Because of the continuously increasing demand for professionally trained psychiatric social workers in comparison with the existing supply, present practice and training are being thoroughly examined in all dimensions. The curriculum of both undergraduate and graduate programs is being reviewed. What social work content can be taught in undergraduate colleges? Can areas of practice be specifically defined for different levels of training for social work aides, technicians, and social workers? How would social work content introduced to the undergraduate affect academic training of the graduate student?

Concurrent with this examination has been the analysis of the content taught for the Master's degree in social work for the "specializations" such as psychiatric and medical. As a result, the content formerly taught primarily to psychiatric social workers will be taught for the most part, in the general curriculum in the 49 approved schools.

Schools wishing to give more intensive preparation for this field of practice will place special emphasis on the modification of social casework or social group work in the psychiatric setting; the working relationship with other members of the psychiatric team; the import of the psychiatric diagnosis of the patient and his family; and a detailed knowl-

edge of the community's provisions for the care and treatment of the mentally ill(2).

It was estimated in 1946, when the National Mental Health Act was passed, that there would be a need for approximately 15,000 psychiatric social workers to provide necessary services in clinics and hospitals. Consistent with the effort to meet the existing unfilled positions throughout the United States, especially for state mental Hospitals, vigorous recruitment efforts are currently under way. Undergraduate students, usually majoring in sociology or psychology are supervised as case aids to interest them in entering the field. Career programs with paid summer field work have been initiated. Lectures, discussion groups and literature are some of the methods utilized in this intensive effort to recruit. It was estimated by the Council of Social Work Education that the number of students enrolled in the psychiatric programs of the schools of social work for the academic year 1958-1959 was 1,062, more than a two-thirds increase from the 305 enrolled in 1947. The Federal Scholarships Program has been a large factor in stimulating interest and enabling qualified people to enter the profession.

The following two manuscripts are suggested as important presentations of the progress of psychiatric social work: 1. The comprehensive study prepared for publication in the Social Work Yearbook, on Psychiatric Social Work, by Daniel E. O'Keefe, covers the growth, development and the current trends of this "specialization," including professional education, the professional association—the National Association of Social Workers, and the stimulus of the Mental Health Grants Program of the National Institute of Mental Health.

2. An Institute in teaching methods for faculty members of all schools having psychiatric social service programs was held in 1957, with Charlotte Towle, Leader. The Proceedings of this Institute, entitled "The Case Method in Teaching Social Work," was published in 1959. It deals with basic assumptions of professional education and the use of the case material for classroom and field work instruction(3).

Further experience and study will pro-

duce additional crystalization of practice. As increased identity as a profession is achieved, proportionate gains in the value of the unique contributions of psychiatric social workers will be noted in the field of mental health.

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MENTAL HEALTH IN EDUCATION

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Educators belong in the mental health group, says the World Health Organization in a recent report:

Children are entrusted to their care for ten to twelve years—the most essential, perhaps, of their lives. Psychological insight is necessary to deal with the different personalities to be found in a classroom, and the various difficulties they experience in learning and in behaving in a social group(1).

And Dana L. Farnsworth says:

If teachers and administrative officers convey attitudes of friendliness, warmth, and insistence on basic integrity and high intellectual standards to their students the quality of each individual's experience in college is quite different from that of the student who feels that his instructors are aloof, impatient of him, and interested only in their subject and private affairs(2).

Moreover, as Dr. R. H. Felix, Director of the National Institute of Mental Health, United States Public Health Service, points out, "the growing interest of educators in the mental health aspects of their work has led to a marked increase in research and program development in this field"(3). The studies that have been made, he says, suggest also that perhaps we need to broaden our outlook to include, along with other factors, study of the school as a social system which affects the mental health of children. "This means," Dr. Felix adds, "that we must investigate the effects on children of such aspects of the overall

school program as its organization and administration, the relationships among the school staff (including non-teaching staff), varying perceptions of staff roles, and methods of staff communication."

Dr. Felix stresses the necessity for emphasis on "positive mental health, on the preservation and promotion of the health of all the children in the school." He notes that since the end of World War II school systems have become one of the largest employers of mental health personnel; also that at the same time the mental health professions have been intensifying their interest in schools as a vital place to study the development of children and new ways of reaching them before they develop serious problems. "What happens to a child in school helps to determine how he will be able to meet the stresses and demands of life."

To what extent are mental hygiene services provided for children in public and private schools? Dr. David Abrahamsen, consultant for the New York State Department of Mental Hygiene, who has studied both types of schools since 1955, concludes in his 1959 report that "relatively speaking, private schools show a greater number of emotionally disturbed children than do public schools"(4). He points out, however, that the private schools have better access to psychiatric help, primarily because their children are of a higher economic status. While the public schools have only one psychiatrist for every 50,000 children, one psychologist for every 11,000, and one psychiatric social worker for every

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36,500, the private schools have one psychiatrist for every 2500 children, one psychologist for every 950, and one psychiatric social worker for every 11,000. "With respect to mental hygiene facilities," he says, "public elementary and secondary schools do not compare favorably with private schools, though the latter, too, fall short of their needs." And he adds: "A child learns when he is emotionally happy; it is this happiness that every educator, whether he is in a private or a public school, has to further."

Considerable attention has been given recently to emotional pressures on teachers. While workers in business and industry have secured a 40-hour week, Louis Kaplan points out in his recent book, and are contemplating even a further reduction in working hours, teachers spend from 45 to 52 hours per week on their jobs or in job-related activities. Moreover, this author adds, "not only do teachers work longer hours than most wage-earners, they are under constant emotional pressure. Classes are large, and there is hardly a moment of the day when the teacher is free from children" (5).

Special attention has been given recently to mental health as part of the preparation of other professional workers besides those in education. Mental health in professional education is one of the projects specifically designated for World Mental Health Year, 1960, and a preliminary report on the subject was presented to the World Federation for Mental Health at the meeting held in Barcelona, Spain, in the summer of 1959. This report indicated a growing concern for mental hygiene as part of the preparation of professional workers in all fields—medicine, dentistry, public health, nursing, social work, law, ministry, business, and

other fields, as well as education. At the Harvard University Medical School students have a one-year course in "Growth and Development," covering both somatic and psychological aspects. Mental health is also represented in a Harvard program for the education of "community health specialists." Another area where there have been significant developments in mental health education is that of the church and religion. Colgate-Rochester Divinity School, for example, has an arrangement whereby the school shares the expense of a hospital chaplain trained in mental hygiene who gives a course in clinical training during the academic year and a summer course at the hospital. An example of mental hygiene in legal education is that of the University of Oklahoma, where the instructor in criminal law makes regular use of the Central State Hospital in instructing law school students. The report at Barcelona characterized mental hygiene instruction as essential in professional education today, concluding that "unless the professional schools recognize this and incorporate mental health into their programs they cannot prepare adequately for professions in the modern world."

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PSYCHIATRIC NURSING

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Considerable progress continues in psychiatric nursing with emphasis on the application of clinical skills in psychiatric

nursing practice, the study of psychiatric nursing content in the basic nursing curriculum, the improvement of nursing services and in the educational preparation of psychiatric aides.

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The Council on Psychiatric and Mental Health Nursing program meeting at the National League for Nursing Biennial Convention in May 1959 was devoted to a presentation of three papers concerned with nurse-patient interaction in clinical psychiatric nursing(1). In a second session at the convention the council members discussed the preparation of psychiatric aides(2). Panel participants included psychiatric nurses and a psychiatric aide.

A review of the Council Newsletter items on the activities of state and local councils indicate a wide range of interests and activities for council members. Topics included for discussion and workshop sessions were remotivation, followup care of discharged patients, education of psychiatric aides, community mental health resources, integration of mental health concepts in the basic nursing curriculum, special clinical problems in psychiatric nursing, improved communication between nursing service and nursing education, the care of the psychiatric patient in the general hospital and a wide range of other topics(3). A report "Suggested Core Curriculum for Pre-Service Education of Practical Nurses and Psychiatric Attendant Nurses" has been issued by the Inter-Council Committee of the Councils on Psychiatric and Mental Health Nursing and Practical Nursing of the Michigan League for Nursing.

The first afternoon session devoted exclusively to the presentation of papers on clinical psychiatric nursing at the annual American Psychiatric Association meeting in April 1959 was enthusiastically received by all present(4).

Nursing educators continue to focus on the identification and integration of mental health and psychiatric nursing concepts in the basic nursing curriculum. A project, financed by the National Institute of Mental Health and sponsored by the National League for Nursing, involving a series of five regional conferences and a national working conference concerned with the content and process of integration was concluded during the year. The reports of the regional conferences in this project have been published in "Concepts of the Behavioral Sciences in Basic Nursing Education"(5). The final report of the working con-

ference will be available early next year.

The program of nursing service consultation of the National League for Nursing through the Department of Hospital Nursing continues to implement an active program of consultation for the purpose of improving patient care through the improvement of nursing services. Initial visits were made to state and voluntary psychiatric hospitals in Pennsylvania; followup visits to hospitals in the Rocky Mountain area. Two-day institutes for all nursing personnel devoted to the subject of "Feelings and Attitudes in Psychiatric Patient Care" were held in conjunction with the followup visits.

Considerable attention has been directed toward the role of the public health nurse in the followup care of the mentally ill. Areas of special interest are the mental health training programs for public health nurses(6) and the activities of the public health nurse in direct care of patients. The use of a part-time psychiatric consultant and a full-time mental health nursing consultant in a visiting nurse service has proven very helpful to the nurses in working with emotionally ill patients in their caseload(7). Such opportunity has also given them increased appreciation of the mental health role of the nurse with all patients. A monograph "Released Mental Patients on Tranquilizing Drugs and the Public Health Nurse" presents an intensive study in the followup care of discharged patients(8).

The educational preparation, functions and evaluation of the psychiatric aide continues to be a focal area of interest for psychiatric nurses. *The Correspondent*, a newsletter published by the National League for Nursing on a subscription basis for psychiatric aides, attendants technicians and practical nurses, has entered its second year(9).

An interesting study on the evaluation of the psychiatric aide indicates the need for careful use of rating tools. The authors suggest that "the use of an objective standardized instrument for obtaining the observation of nurse supervisors is felt to be superior to the usual impressionistic methods in evaluating aide performance"(10, 11).

The result of intensive investigation by a

working committee of the National League for Nursing and extensive review by nurses and their co-workers throughout the country culminated in the publication "Suggestions for Experimentation in the Education of Psychiatric Aides" (12). This material should prove useful to nurses interested in experimenting with preservice programs for aides as well as for on-the-job training and inservice programs.

The Seminar Project for Teachers of Psychiatric Aides supported by the National Institute of Mental Health and sponsored jointly by the American Psychiatric Association and the National League for Nursing, has completed seminars in North and South Carolina. Thus far 114 nurses from these states have been enrolled in the seminars designed to improve the inservice education for aides. During the coming year seminars will be conducted in Arkansas and Tennessee and a final evaluation of the project will be completed in September 1960.

At the APA Mental Hospitals Institute in October 1958, the Training of Ward Personnel (13) was discussed. Considerable interest was indicated in the role expectations various co-workers have for aides. Several illustrations of aide training programs in state and other psychiatric hospitals were described.

Psychiatric nurses are vitally concerned with the application of clinical skills in psychiatric nursing practice. Emphasis has been placed on the roles of mothering, listening and playing in the nursing care of a child hospitalized in a psychosomatic unit of a hospital (14). The nurse's skill and ability in working with patients expressing characteristics of hopelessness and aggressive behavior will have great meaning for hospitalized patients (15, 16). Patients with special nursing problems such as the geriatric patient offer great challenge to all personnel in psychiatric nursing (17).

In a discussion of the psychiatric nurse's relationship with the patient, Farrar states "a prime requisite as being tolerant adaptability to all sorts and conditions. Tolerant adaptability with the purpose of engaging patient's trust and cooperation, of relieving symptoms and even, if possible, modifying unwholesome attitudes" (18). The import-

ance of all psychiatric team members working toward the common goal of improved patient care is stressed in a discussion of the working partnership of the psychiatrist and the nurse (19).

Changing patterns and philosophy of psychiatric care have fostered the need for new roles for nursing personnel (20). Nurses are becoming effectively involved as leaders in group psychotherapy in selected settings (21).

Continuing interest has been focussed on the role and function of the clinical specialist in psychiatric nursing (22). The interaction between patients and nursing personnel with emphasis on a method for study of the process has been an additional area of concern (23).

Psychiatric nurses have indicated through their group activities, publications and research studies the need to further clarify and define the role of the nurse in psychiatric settings and the role of the nurse in the care of the discharged psychiatric patient. Much has been accomplished, but there are many areas in need of continuing investigation and study.

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FAMILY CARE AND OUTPATIENT PSYCHIATRY

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FAMILY CARE

Family Care continues to show a steady growth (Table 1) in the United States.

TABLE I

PATIENTS IN FAMILY CARE IN THE UNITED STATES AS OF JUNE 30, 1959

	All Patients	Mentally Ill Only
New York	2,747	1,834
California	1,416	939
Michigan	1,155	810
Pennsylvania	1,031	
Illinois	1,044	809
Ohio	965	490
Veterans Administration	910*	910
New Jersey	490	462
Maryland	489	392
Rhode Island	262	
Massachusetts	221	184
Connecticut	55x	
Virginia	13	8
Florida	12	12
Idaho	6	4
	10,816	6,854

1958 9,313

1951 4,937

* As of December 31, 1958

x As of June 30, 1958

Two new states appear on the list for the first time, (N. J. and Idaho.) New Jersey

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has one of the larger programs and has been making placements for 8 years. As in most states, more rapid program development could occur if trained social workers and financial support for expansion were available. Idaho is sponsoring a demonstration of the use of family care in an area with limited mental health resources. Selection and placement of patients is from those believed most likely to become self supporting.

Ullmann(1) studied 191 family care placements and found that 2/3 of the patients so treated continued to live outside of the hospital well over a year after placement. The number of years spent in the hospital, the type of ward and the number of previous admissions were factors significantly related to outcome.

Sixteen family care workers(2) were able to predict the probable outcome of 64 family care placements from abstracts prepared by social workers. Another study (3) compared a family care group of 45 patients with 57 patients released to the community through trial visit procedure.

Even though the family care group seemed to have a lower potential for living outside the hospital, they remained out of the hospital in the same proportion as did those released on trial visit status. The

attributes of a good family care home were investigated (6). The most significant finding was the favorable influence of a male caretaker. Not only is the good caretaker a good mother but it is a better home for patients when there is a "good father," or "benevolent parental figures."

Cummings(4) says the placement of patients on trial visit in foster homes is an intermediary or last step for patients who are considered able to live outside the hospital but are not adequate or ready for complete independence.

Kirkpatrick(7) indicates with the present focus on an "open door policy," family care is another valuable step in giving patients an opportunity to find greater self direction.

North Carolina(8) has moved 900 former mental patients from institutions to join 5,000 elderly who live in 352 private boarding homes. The Austin (Texas) State Hospital(9), also attempted to reduce overcrowding among its patients 60 years and older by placing 806 patients in nursing homes, supervised by a hospital clinic team that spends a half day a week in the field.

OUTPATIENT PSYCHIATRY

The year's most exciting development in outpatient psychiatry has been the report of the Worthing Experiment from England (1, 2, 3). Admissions to mental hospitals increased markedly and serious overcrowding resulted in England as it has in the United States. The Graylingwell Hospital in Chichester developed its Experiment in Worthing, a city of 160,000 people located 22 miles distant from the hospital. The Worthing psychiatric service consists of an outpatient department in the general hospital and three units in another building located in a residential area. These units are a day hospital, and outpatient treatment service, and a home visiting service. Over 1/3 of all initial contacts with patients were made in the home. At the end of 2 years, 71% of the Graylingwell Hospital's admission district was included in the experimental population.

Admissions from the Worthing area dropped by 61.7% and the drop from the total admission district was 43.5%. Ad-

missions among the elderly fell by 51% and there was a reduction of patients in hospital residence of about 10%.

The senior psychiatric staff of the Maudsley Mental Hospital, Nottingham, England, spend over half their time in outpatient work (4). The integration of these clinics with the local health authority was achieved by pooling staff personnel. A feature of this outstanding and comprehensive community mental health service is a joint pre-admission visit paid to the home of a patient by the psychiatrist and a social worker. Such visits are made routinely to all patients appealing for help who are 65 years of age.

Mandelbrote(5) emphasizes the need for "education of the community toward recognition and tolerance of mental illness, and the early referral of psychiatric problems through the proper training of general practitioners and health visitors. Of 288 patients visited in their homes, 50% required hospital admission.

Boaro(6) describes the division of the city of Amsterdam (900,000 pop.) into 6 regions serviced by 12 psychiatrists and 25 nurse-social workers to give community psychiatric service 24 hours a day. Two hundred and fifty inquiries are answered daily and care is provided for 3,000 patients living in the community. Helsinki(7) also provides home visiting services after O. P. D. treatment. Regional health units with outpatient clinics, day and night hospital, family care and sheltered workshops have been established in Nigeria and in South Africa(8).

A psychiatric emergency service(9) operating 24 hours a day with no waiting for help, gave service to 1,516 new patients in 6 months in the Bronx, N. Y. Only 10% were sent to longterm psychotherapy. Immediate consultation was available for social agencies.

Simultaneous treatment(10), of 20 schizophrenic patients and the members of their families as outpatients proved successful in 80% of the cases. When family members did not appear, the patient's condition deteriorated and often necessitated hospitalization.

Psychiatric outpatient clinics are not possible in thinly populated areas. As a

consequence of distance the further a patient lives from a treatment facility, the more disturbed he has to be before he gets help. Smith and Wesson (11) attempted to meet this problem by training general practitioners to use their offices as outpatient clinics. Fourteen days of planned instruction in a year made this possible.

Brief psychotherapy may be the treatment of choice in an outpatient clinic, rather than an expedient when criteria for selection of cases are carefully applied, according to Visher (12).

A study of the fate of psychiatric clinic patients (13) points up the failure of many patients to accept psychotherapy when it is made available and the relatively poor results of psychotherapy in patients who do accept it. The Phipps Clinic saw 3,413 new outpatients and referred 17% to individual psychotherapy and 10% to group psychotherapy. Thirty-five percent failed to accept it when available. Three of every 4 patients who began psychotherapy stopped coming without discussing this step. Maximum benefit was obtained by only 9% of those referred for psychotherapy.

The planned flow of patients with psychiatric illness through community resources is advocated by Greving (14) to reduce the need for mental hospital care and to conserve scarce professional service. Outpatient clinics should, in this view, accept only the more seriously ill who are harmful to self, family or community. Expanded counselling service may then handle minor problems that form a large proportion of clinic admissions.

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FORENSIC PSYCHIATRY

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Once again, the periodical literature on forensic psychiatry seems to lay emphasis on the criminal aspects of the law. Watson (1) gives an extended study of the aftermath of the Durham case and some of the subsequent decisions of the District of Columbia Court of Appeals amplifying and clarifying the "product" test of criminal responsibility. He concludes that psychiatrists have failed to use the new rule for its intended purpose, namely to explain the way in which mental illness caused the defendant to commit the act alleged. An unsigned note in the Colorado Law Review (2) considers the Durham Rule a decided improvement, and comments that it proves that the prevailing "tests" can be modified and broadened "without disastrous consequences." Lord Keith (3) makes some observations on the Scottish doctrine of diminished responsibility, recently adopted in the English Homicide Act. He states that under this doctrine the status of the psychopath is not clear, and he speaks of Denmark, Sweden, and Netherlands as having a more scientific approach to that problem. An article by Manson (4) takes up the recently enunciated military principle of lack of mental capacity to intend as distinguished from mental irresponsibility as defined in the Manual of Courts Martial. Apparently, he says, the courts are interested in the evidence, not in the nomenclature of mental disorder, and he warns against codifying medical beliefs into law.

Gibbens, Pond, and Stafford-Clark (5) report a followup (1948-1957) of 72 criminal psychopaths, comparing them with 59

controls. Only 18 of 105 subsequent convictions were for aggressive crimes. They give as their opinion that the "findings do not portend so hopeless a prognosis as is generally implied. Kozol (6) discusses the psychopath before the law. The new Massachusetts commitment law recognizes character disorder as a ground for commitment to a mental hospital. Mental illness should not be considered as synonymous only with psychosis. Kozol says. Harder (7) reviews 860 defendants examined at the Rheinau hospital in Switzerland. 43% were diagnosed as psychopathic personality with or without mental defect, whereas only 6.4% were considered schizophrenic! Of the group 20% were considered responsible, 8% not responsible, and 71% of diminished responsibility. Tuchler (8) discusses psychiatry and criminalistics. He emphasizes the need of each discipline to translate scientific data into everyday language.

In the field of testimony, Davidson (9) deals with testimonial capacity. There is no single test for measuring it, he says; the psychiatrist's clinical judgment is still the best instrument. Orenstein (10), in a symposium on forensic medicine, discusses the credibility of the witness. He points out that although the psychiatrist can be helpful in establishing credibility, his services are limited on account of legal procedure. Freedman (11) deals with pharmacodynamics and psychiatric investigation. He remarks that "truth serums" stimulate the unrepressed expression not only of fact but of fancy and suggestion as well, so that they are actually not "truth serums" at all. Guttmacher (12) discusses psychiatric court

¹ St. Elizabeths Hospital, Washington, D. C.

clinics, advocating more accent on therapy rather than limiting their function to diagnosis and disposition. Everett and Suitt(13) treat the evolution of bench consultation. The expert, they say, must have some knowledge of the germane legal issues, and of the relevance of the psychiatric evidence to the legal problems involved. Kreutzer (14) makes a thorough analysis of the Briggs Law of Massachusetts. He concludes that it is a fundamental part of the administration of criminal justice in that State. Donnelly, Edgren, Satter and Ryan(15) present the results of a joint social-psychiatric-legal counselling service set up in Hartford on an experimental basis two years ago. Stern (16) presents a scholarly essay on the problem of privilege. He expresses the hope that eventually privilege may rest on a sound principle as a sole criterion, namely possible harm to the patient.

Ustin(17) discusses testamentary capacity, reviewing the psychiatric problems involved. He notes that as yet there is no place for legal recognition of the impact of the unconscious on human behavior in this field.

Ross(18) presents another in his series of studies on the commitment of the mentally ill, this time on problems of law and policy. Most of the statutes are not in general policy agreement, and apparently some basic questions have not even been considered. His article includes a state-by-state synopsis of laws on such topics as notice hearing, jury trial, and justification for commitment. Davidson(19), in a chapter of the American Handbook of Psychiatry, deals with the commitment procedures and their legal implications. Another lengthy article, this time by student editors (Brucken, Genger, Rice, Shaevisky, Slye and Volpe)(20) deals with mental illness and contracts. The authors conclude that the tests for inability to contract have been basically the same for centuries, uninfluenced by advances in psychiatry.

In a more general field, Overholser(21) deals with major principles of forensic psychiatry.

In a symposium on criminal justice, Roche (22) discusses criminal responsibility and mental disease. He advocates the Durham rule as providing the largest range to the

psychiatrist in being of use to the court. An unsigned note in the Yale Law Journal(23) considers the release of defendants who have been committed to a mental hospital following acquittal by reason of insanity. The note recommends a board of psychiatrists, lawyers and members of the community at large to pass on such releases. Goodman(24) discusses legal inertia as exemplified in the "almost contemptuous disregard" with which several courts have cast aside suggestions that the Durham rule should be adopted. Diamond(25) in a thoughtful editorial deals with the "fallacy" of the impartial expert.

Most of the state legislatures met this year. In the spate of legislation, very few laws relative to mental health seem to have been passed. Iowa(26) modernized the terminology of mental health, substituting, for example, "mentally ill" for "insane." New York(27) authorized its directors of State hospitals to establish sheltered workshops on the grounds of the hospitals. Several more States have adopted the interstate compact, among them Missouri, North Carolina, South Carolina and Vermont.

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ADMINISTRATIVE PSYCHIATRY

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Psychiatrists, physicians, and the general public continue to press for greater diversification of psychiatric facilities to provide a type of longitudinal patient care having a flexibility and selectivity little known a few years ago. The existence of large state hospitals isolated from the rest of the medical and social community can only be viewed as a poor answer to any psychiatric problem other than for domiciliary care of persons rejected by society and medicine. Indeed they are obsolescent(16). The development of comprehensive psychiatric community services may be based on the mental hospital and involve the setting up of outpatient clinics, day and night centers. Mandelbrote has pointed out the importance of educating the community towards recognition and tolerance of mental illness and of training the family doctors and public health officers in order to facilitate early referral and continuity of treatment(32).

The psychiatric hospital of the future is pictured as the headquarters and training and research center for the local mental health organization with only a small residential unit for special treatment. As many patients as possible would be treated in outpatient clinics or wards of a general hospital. The mentally disordered criminal should be treated in a separate unit(38). The younger long-term care patients, of whom the great bulk will be schizophrenic, will live in groups and to a large extent look after themselves(9). In New York

State, certain statistical trends which show a marked increase in geriatric psychiatry, a marked increase in child psychiatry, plus a change in the composition of the population in the institutions as turnover of patients increases, produce a net tendency to an increase of dependency and handicap in the residual hospital population; Brill and Patton conclude this will mean fewer working patients and the need of more skilled and more efficient paid employees (5).

The Health Minister of Ontario would segregate "hopelessly ill" mental patients and develop diagnostic and treatment centers in larger cities with sufficient staff to carry on outpatient, day care, night care, and short term inpatient treatment; his mental hospitals would be units of 250 to 300 beds with a staff particularly oriented to research in schizophrenia(13). The South African National Council for Mental Health has developed a provisional plan for comprehensive community care(33). Programs have been described as they have developed in New York State(14), Minnesota(22), Eastern Kentucky(21), and Philadelphia(28). For those considering establishing a mental health unit, Hamovitch details the history of the formation of one noting certain principles in its establishment(18).

The usefulness of having psychiatrists on call twenty-four hours a day is a well known advantage of Querido's integrated Amsterdam plan(2). The Psychiatric Home Treatment Service of the Boston University School of Medicine provides emergency

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treatment for those who refuse or are unable to get to a hospital or clinic(35). By having a psychiatrist immediately available to see any emergency for brief therapy, less than 10% of the patients need referral for prolonged treatment, and chronic patients could be carried with less expenditure of time(7).

In recent years there has been a tremendous growth in the use of the day hospital, some of the types of setting, facilities, staffing, types of patient, and programs were summarized from the proceedings of the First National Day Hospital Conference(16). Ewen Cameron described briefly how the program at Allen Memorial Hospital has been changed. G. Harrington and Mayer Gross detail their several years experience at Uffculme Day Hospital and recommend a maximum of 16 patients with no more than a few of them schizophrenics in order to maintain a cohesive therapeutic group(20). A review of the literature, as well as general English attitudes about day hospitals, is presented by Craft(8). They have been found useful in the treatment of severely disturbed schizophrenic children, and greater development of them might decrease the inappropriate placement of a large number of mentally ill children in residential centers(15).

Bennett has reviewed the problems in establishing and maintaining psychiatric units in general hospitals with facts and figures for several(3). Details about the setting up of a small psychiatric inpatient service in a small rural general hospital were given by Adams, who commented on the advantages and disadvantages of such a program(1). The opening of a general hospital's closed ward did not require additional personnel nor modification of treatment and admission policies(24).

A brief overall impression of Soviet psychiatry is given by Lebensohn(27), while another author who visited a 2,220 bed mental hospital in Moscow expressed surprise to find "such fine hospital care" with an employee to patient ratio of one to one and a staff of 167 physicians of whom 105 were psychiatrists(26). British psychiatry was reviewed by several (23, 37): Beresford of the York Retreat adds comments about the contrasting administrative prob-

lems of private and public hospitals, particularly in regard to an open door policy(4); Paterson stated, "... the improvements in therapy have been brought to the ordinary citizen to a far greater extent than would have been possible if it had not been for the National Health Service," and, "It is certainly true that any fears which might have been entertained that socialized medicine might stifle initiative among practitioners working at the periphery have not been realized"(34).

The costs of mental illness, both direct and indirect, with many valuable tables and figures were the subject of two monographs: in the one, *Economics of Mental Illness*, Fein is generally conservative in his estimates(12); in the other, state mental health programs and tax problems faced by legislatures are discussed by Spector(36).

Statistics concerning the number, distribution, and activities of psychiatrists show that although the number of psychiatrists has increased in three years 21.2%, they are still grossly unevenly distributed. Over half have psychiatric hospital affiliation and two-thirds are in private practice(11).

Malzberg reported his study of first admissions in New York State for psychoneuroses(30), discussed the difference in rates for all first admissions of Negroes(29), and summarized many of his important statistical studies(31). In Norway the incidence of mental disease was found to be higher among refugees than among matched settled average population(10). Results supporting the finding that schizophrenic admissions are higher from low socio-economic areas and manic-depressive from high were reported, but the investigators expressed doubts that such results establish the social variables as contributory(19). A Canadian study concluded that differences in admission rates between provinces are less indicative of the incidence of mental disorders than of such factors as social judgment regarding what constitutes mental abnormality, social demand for hospital care, availability of care, and variations in diagnostic criteria(17).

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MILITARY PSYCHIATRY

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Since the exploration of outer space is a military activity, the psychological aspects of space travel on personnel have become the subject matter of study by military psychiatrists.

Ruff and Levy(1) described experiments to study the stresses which might be expected to occur in space flight. They state that the current knowledge of stress in space flight is based largely on inference from the study of analogous experiences. From the study of these data, they believe

that it can be predicted that space flight will impose no psychological stress which carefully selected, trained crews cannot withstand. In the laboratory two types of experiment have been employed: one, a study of prolonged confinement during which an interesting effect—that of regressive behavior—was observed; the second group of experiments was devised to determine what kinds of stimuli, supplies, and structuring were necessary for effective functioning. Their findings indicate that at least 7 groups of variables must be considered in planning isolation experiment

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Wood: 5) considers the issue of returning psychiatric patients to duty. In his opinion this matter brings into sharp focus numerous important problems for the military psychiatrist. For example: his own feelings of security, his adjustment to military life, his ability to evaluate a new kind of patient in a highly specific life situation, his concepts of good treatment, and his ability to prognosticate. He finds that when psychiatrists enter military service, they all share an abrupt total unawareness of the special requirements for the role of the military psychiatrist. By the time that they feel comfortable with their duties, they are on their way to civilian life again. In his article, Wood deals with specific problems of returning a patient to active duty. Generally

sonnel shortages so constantly with us. The Joint Commission on Mental Illness and Health has just published their third book which covers this general area. Dr. Albee (1) carefully documents the tremendous shortage of professional people and suggests a rather hopeless picture unless some very major scientific breakthroughs occur or basic changes in social attitudes result in more people going into the sciences, including the behavioral. It is necessary that we as educators create an image of the professional man that will attract the high school graduate into scientific work. Between 1956 and 1959 we did improve the ratio of psychiatrists to the general population from one per 19,200 to one per 16,400(2). However, as Albee(1) notes, the rate of increase in psychiatrists is not going to be sufficient to keep up with our population increases so that this ratio may not be maintained. A further fact of significance is the concentration of psychiatrists in large cities, with 54% of all psychiatrists residing in the 15 largest metropolitan areas, representing only 31% of the total United States population(2).

Another discouraging trend appears to be the decreasing number of medical school applicants in the face of increasing college enrollments and increasing numbers of graduates from colleges(3). Also, there is some evidence suggesting that medical schools are not attracting the same quality of students that they formerly did. In the year 1950-51, 40% of entering medical school students came to medical school with an "A" average. In 1958 this had dropped to only 18% coming with "A" averages. In light of this general picture the Dean of the School of Medicine of the University of Pennsylvania(4) believes it is unlikely that the psychiatric specialty as now constituted can meet the ever-increasing needs. He brings up the possibility of training a large number of "general practitioners of psychiatry" who would be trained through a different medical school curriculum than our current physicians. He feels we are going to have to supply more practitioners of psychiatry within the medical field or face the clinical psychologist, social workers and other non-medical groups taking over

more and more of the treatment of the mentally ill.

It is interesting that psychiatrists as a group are quite active in teaching and a recent report indicates that one-third of all psychiatrists hold academic appointments (2). Jurgen Ruesch, however, points out the extent to which our teaching activities have to compete for our time with TV, radio, telephones, as well as invitations for social affairs, scientific gatherings, committee meetings, *etc.* Rare is the psychiatrist who has an adequate time to teach in face of these demands, added to clinical work and research interests(5).

A Philadelphia group(6) has made a comprehensive survey of 30 psychiatric departments in medical schools in an attempt to discover what might be considered a standard, appropriate and realistic structure for a department of psychiatry in a medical school. It is an excellent study and should be read by all in the field. It makes clear the tremendous range in the quality and type of departments that exist in our medical schools, varying from departments with 17 full time teachers and research grants within the millions to departments with no full time staff or beds and no research funds. The group notes the extent to which department and administrative function may swamp the psychiatric leadership and creativity of the faculty and the impossible expectations that are made on the average department chairman.

UNDERGRADUATE PSYCHIATRIC TEACHING

How to integrate teaching of human behavior into the medical school curriculum in an understandable and effective manner has been considered by a number of authors. Two psychiatrists in New Orleans (7) believe that teaching human behavior as a basic science in medical schools is best approached by illustrative clinical material well integrated with basic psychological, cultural and neurophysiological data. In an attempt to arrive at a better understanding and teaching of human behavior in health and disease, the new medical school at the University of Kentucky has organized a Department of Behavioral Science(8). Here a health team concept will be developed with the student

learning early the role relationships between different professional groups interested in behavior. Staffing pattern in the unit includes sociologists, cultural anthropologists, experimental and social psychologists. This general approach in medical education is being carried out extensively elsewhere as is summarized in an article from the University of Natal in South Africa where much emphasis is put on a knowledge of sociology, anthropology and psychology in the training of medical students(9). In the Department of Psychiatry at Baylor University College of Medicine a sociologist is used extensively to help the students to understand behavior in terms of "What people do" rather than "What they should do"(10). Cooper(11) has been concerned that psychiatry and psychology are not designed to provide values and goals which can be communicated to medical students and in turn be helpful to them in treating patients, particularly in dealing with some of the deep-seated characterological problems seen so often. He raises the question as to whether the sociologist should take a major role in medical education from the standpoint of helping the medical student to develop clearer concepts of values and goals.

One recent study underlined the importance of the resident in the teaching of medical students(12). The value of joint teaching of medical students by an internist and a psychiatrist over a period of years was published in a study from the University of Pittsburg(13). The two teachers attempted to develop an integrated teaching experience and to give neither a purely psychiatric nor medical image to the patient. Less frequently, then, did the question appear, "Is this psychic or organic?"

One author at the annual APA meeting this year noted the low status which the lecture occupies as a teaching method in psychiatry(14). He outlined several suggestions to increase the effectiveness of the lecture, suggesting such things as copious use of passages from the autobiographic writings of people who have undergone mental illness, and verbatim transcriptions of recorded interviews with patients to illustrate basic material in a lecture. An interesting attempt to make

psychiatry more comprehensible to the sophomore medical student through a course in psychophysiology was presented by an author from Colorado(15). Actual laboratory work in psychophysiology is undertaken on a limited scale.

Coleman(16) outlines an approach to the teaching of psychotherapy to medical students which he has found helpful in allowing the student to disencumber himself of some of his preconceptions, premeditations and distortions of attitude and behavior, as well as his discomfort in a close, intimate relationship with a patient. At the University of Oklahoma(17) a longitudinal curriculum allows for training in psychotherapy to take place over a considerable period of time. The value of the longitudinal curriculum in this type of training over the usual "block" system in teaching psychotherapy is emphasized.

It is interesting that very few American medical schools offer any teaching of sexual and marital problems to medical students and very little appears in the psychiatric literature through the years on this subject. Recently in Britain a half day symposium on this subject was held which underlined the lack of such training and the need to have it set up as part of the curriculum(18).

GRADUATE TRAINING

A review(19) of the latest available figures on graduate psychiatric training in the United States indicates that there are currently 288 residency training programs with a total of 2,770 appointees. Seventy-eight percent of available residencies in psychiatry are filled. These figures indicate approximately 260 more residents in training in psychiatry this year than at a comparable time last year. It is interesting that there are almost twice as many residents in training in surgery (5,373) or internal medicine (4,842) as in psychiatry. There is a very interesting general review article on the development of internships and residencies(20) which indicates that between 1940 and 1958 the number of medical students increased only from 21,271 to 29,473, but during this same period the number of residencies available increased almost seven-fold or from 4,882 to 30,595. The extent to which internship and residency pro-

grams are located outside direct university zones of influence is noted and the author ends up with the final comment, "It would appear that the outstanding medical task for the remainder of the Twentieth Century will be to foster centers of medical excellence in strategically located hospitals in *all* American communities" (20).

The American Board of Psychiatry and Neurology and the story of its founding is presented in a lively review (21). We are fortunate to have available the results of a 10-year effort to delineate the factors important in the selection of psychiatric residents, based on the studies at the Menninger School of Psychiatry (22). This book should be in the hands of all psychiatric educators and carefully perused by selection committees. Chapter XVII—"Recommendations"—should be of major importance to other program directors. A much briefer study is made by Eisendorfer (23) of the factors which make for a good psychoanalytic candidate based on the work of the Committee for Admissions in New York Psychoanalytic Institute.

Morse (24) believes that there is a serious and little recognized deficit in post-war residency training which consists of minimal interaction between younger psychiatrists and the rest of the medical profession. As he points out, the young psychiatrist goes to few medical meetings, mixes professionally only with other psychiatrists and does not communicate adequately with the referring physician. He feels that it should be the duty of training programs to underline the importance of proper communication and interaction with non-psychiatric medical colleagues. A Cornell group (25) underlines the difficulty in interesting residents in the total hospital environment as a therapeutic tool and in teaching them the importance of what goes on outside the therapeutic hour. At the Payne-Whitney Clinic residents in the third year are designated as floor doctors and are put in charge of the management of a unit.

Those doing supervision work in psychotherapy will be pleased to have Ekstein and Wallerstein's new book from the Menninger Foundation titled, *The Teaching*

and Learning of Psychotherapy (26). It is a comprehensive review of the process of supervision. Two teachers from the University of Utah (27) note the importance of giving the beginning psychotherapist a feeling of personal security which can often be accomplished by assigning the resident a patient to whom he can relate easily. Oftentimes this must be a patient from his own socio-economic group. The authors underline the value of exposing the trainee to several theoretical approaches to provide perspective. A new book by Glad (28) also expounds the value of several theoretical approaches. His book is aimed toward further developing a science of psychotherapy. This book should provide the supervisor and the teacher many new ideas to broaden the interests, views and skills of the beginning psychotherapist.

A sizable number of residents continue to come from foreign lands, although interestingly the proportion in psychiatry is less than the over-all average. In psychiatry 19% of our residents in training are graduates of foreign schools, whereas over-all 23% of resident trainees in America are graduates of foreign schools (19). Smiley (29) gives a review of the results of the first year of operation of the Educational Council for Foreign Medical Graduates. In the February 1959 examination in the United States 48% obtained passing scores and 27% obtained borderline scores leading to temporary certification. For those training directors interested in medical education around the world, may we recommend the special international issue of the *Journal of Medical Education* (30).

A very interesting report of 5 years' experience at Harvard University School of Public Health on the education of mental health specialists appeared (31). This is a post-graduate course of one to three years' duration for psychiatrists, Ph.D.-level psychologists, and senior psychiatric social workers. The course is designed to help the clinician shift from his emphasis on the individual to comprehending community health factors. What is outlined is training in a significant new sub-specialty of psychiatry where there is no generally accepted systematic body of knowledge.

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REHABILITATION AND OCCUPATIONAL THERAPY

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A year ago in this review the contributions of British investigators to psychiatric rehabilitation were emphasized and the prediction was made that the changing pattern of psychiatric thought and practice in the United Kingdom would influence psychiatric methods elsewhere(1). Events of the past year sustain this prediction and indicate that American psychiatry is following the British orientation toward the open hospital and the expansion of community psychiatric services. The Milbank Memorial Fund has contributed generously to this movement by supporting visits to

selected British hospitals by state hospital authorities of New York, New Jersey and Connecticut(2) and by making possible a study of the open mental hospital by Hunt(3). From his survey Hunt concludes that "the great fundamental value of the open-door movement lies in its demonstration that the mentally ill not *ought* to be, but *can be*, destigmatized."

In this country change toward an open-door policy is progressing slowly(4, 5, 6, 7), while the development of community psychiatric services is progressing rapidly. Goshen(8) stresses the value of the day hospital and recommends that each state accept the concept of the day hospital as

¹ Silver Hill, Valley Rd., New Canaan, Conn.

an experimental substitute for new or expanded hospital buildings. Seale and Watkins(9) describe a day hospital especially designed to keep the patient in contact with the community. Fisher(10) criticizes such programs because of their lack of research orientation. Miller(11) emphasizes that the problems inevitably created by community participation in rehabilitation can be minimized if leadership is assumed by trained personnel. Leyberg(12) points out the advantages of psychiatric services in general hospitals but insists that a good relationship with a mental hospital is essential. Whitten(13) says that discharged patients must have rehabilitative services outside of the hospital if readmission is to be avoided and Muth(14) concludes from a survey of such services that there is great variation in the aid rendered. Ullman and Berkman(15) report that family care programs can markedly reduce the probability of readmission of discharged psychiatric patients. Klapper(16, 17) shows how local mental health associations can cooperate with various community agencies helping the patient and says that 38 of 86 leading rehabilitation centers include ex-mental patients in their programs. Irvine, Tracy and Fine(18) describe a statewide plan that supplements psychiatric hospital treatment with vocational rehabilitation which helps move the patient into the community and into employment. Many other programs that facilitate return of patients to productive extramural jobs are in progress(19, 20, 21, 22, 23, 24, 25, 26, 27). Likewise, movements are afoot to bring competitive industry into the hospital. Clark(28, 29, 30, 31) tells of a program of activity and freedom which includes contract electrical work brought into the hospital and Wadsworth, Scott and Tonge(32) and Clark(29) report on a successful hospital workshop that has developed into a complete intramural factory. Minde(33) gives an account of a similar experiment conducted in conjunction with a rubber company. Benney(34) stresses the therapeutic importance of work, while Bolin and Scott(35) say that work not only is of therapeutic value but also is one of the favorite activities of patients.

In the face of widespread enthusiasm for

the open-door policy, the expansion of community psychiatric services and the acceleration of the rate of discharge of mental hospital patients, voices of caution are heard. Sands(36) believes some patients are being returned to their homes completely unsuited to deal with their problems. Similarly, Slear(37) observes that tranquilizing drugs make it possible for many psychiatric patients to return to the community while they are still socially disabled individuals. And Kubie(38) challenges "the partial cure" and expresses concern over the problems thus created for the patient, the family and the community.

Psychiatric first aid, a method of rapid rehabilitation that has been employed successfully in the Netherlands for thirty years (39), is beginning to take root in the United States. Coleman and Zwerling(40) describe such a service being used advantageously in New York. Another rehabilitative facility used extensively in Europe, the Homemaking Service, which supplies mother substitutes for homes in which mothers are hospitalized for mental illness(41), is now being more widely employed in America(42).

Adjunctive therapies are playing an increasingly important role in rehabilitation. Key(43) thinks that training programs for coordinators of such therapies are needed. Sherwin(44) and Rosé, Brown and Metcalfe(45) discuss the use of music in rehabilitating psychiatric patients, while a group of specialists(46) considers how music can assist in the care of exceptional, emotionally disturbed, and brain-damaged children. Certain experts on recreation(47, 48) report on various phases of recreational and household patients and offer advice on recreation counseling for the mentally ill. Silson, Cohen and Hill(49) state that there is a need for well organized recreation programs under trained hospital staffs. Ackerman, Mitsos, and Seymour and Smith(50) describe camping programs and the latter author expresses the opinion that such activities help prepare hospitalized patients for their return to the community.

Psychiatric patients of a particular age or with particular types of problems receive special consideration from numerous investigators. In London, funds have been allocated for two hostels where children leav-

ing schools for the educationally subnormal will be helped to find their places in the community(51). Tizard(52) visited the U. S. S. R. and studied mental health work, especially with children. His informative report stresses the generous staffing of all institutions and the excellence of psychological research in the Soviet Union. In New York, an important meeting was held to discuss problems of residents in homes for the aged(53). The principal theme under discussion was how to deal with mentally disturbed patients. Hobby therapy is considered important in such homes(54). Morrow and Rosenbaum(55) discuss the importance of psychiatry in the rehabilitation of the aged and conclude that a team of professional workers can best plan an effective mode of treatment. Ohio has developed 25 nursing homes to care for the mildly mentally ill(56). Although these homes have no arbitrary age limits for patients, the bulk of their work is with aged persons who would be burdens to their families, yet do not need the services of a mental hospital. Rainer and Kallman(57) report on a mental health project for the deaf and stress how psychiatric patients who have hearing defects have been neglected in the past. Rood(58) describes a method of rehabilitating sexual psychopaths by means of a hospital therapeutic community with an accent on group therapy and states that only 11% of 1,000 such patients have been recidivists.

The recent periodicals contain many publications dealing with relieving the emotional factors that obstruct the rehabilitation of the physically ill. Because of limitation of space, only a few of these papers can be considered. Zane(59) points out that physical rehabilitation is frequently adversely affected by personality traits developed as defenses against anxiety. Maritz(60) says that physical disability has a subjective meaning determined by the previously existing personality and both he and Cath(61) emphasize the role of the body image in the production of psychological problems. Vernon(62) believes that successful rehabilitation of cardiac patients relies on relieving anxiety by demanding the patient's dependency and later by supporting a realistic program of restoration.

Rogers(63) suggests somewhat similar principles of rehabilitation for all chronically ill patients. Marmor(64) states that the process of rehabilitation consists of physical restoration, rehabilitation education and psychological rehabilitation and that psychological rehabilitation is the most important element.

Several books dealing with rehabilitation have been published during the past year. The most comprehensive one is that edited by Rusk(65). He and his 37 collaborators have created a text which will serve as a reference for every member of the rehabilitation team. The chapter dealing with the rehabilitation of psychiatric patients is particularly well done. Simon(66) gives an excellent description of modern concepts of rehabilitation which center around the treatment of the whole person in all aspects of his life. Meyer and Borgotta(67) offer a critical evaluation of certain techniques used in rehabilitating discharged patients. Caudill(68) presents observations that seem to make it possible to predict the likelihood of group disturbances of various kinds. McLean and Taylor(69) discuss the maladjustments of the industrial worker, industrial practices and mental health aids in industry. The American Psychiatric Association has published an excellent book(70) that fully discusses the place of volunteers in programs of treatment and rehabilitation and the American Medical Association's Committee on Rehabilitation has approved a booklet that outlines ways to strengthen rehabilitation facilities at the grass roots level(71).

It is important to note that the United Kingdom has promptly implemented the significant Report of the Royal Commission on the Law Pertaining to Mental Illness and Mental Deficiency(72). Last July Parliament approved a bill(73) which embodies many of the changes recommended in the Report and which, when it soon becomes operative, will enable mentally ill persons to enter a hospital without signing a voluntary form and without power of detention by the hospital(74). Obviously, this far-sighted policy not only will bring about vast changes in the practice of psychiatry, but also will for the first time give the mentally ill the same legal status

as the physically ill. Carstairs and Wing (75) believe that the British public is ready for the changes recommended.

Occupational therapy has made progress in 1959. Leaders in the profession are focusing their attention on educational procedures (76) and curricula (77) in order to meet the demands of changing medical concepts. The American Occupational Therapy Association Study Plan in preparation since 1951, approved in 1957 and supported by a substantial grant (78), is now under way. Many new ideas about training should come from this investigation. Other changes in the approach to the education of occupational therapists are also evident. The Committee on Graduate Study of the A.O.T.A. has prepared a plan for the development of graduate education leading to higher degrees in occupational therapy (79). According to Thompson (80), only four colleges in this country presently offer master's degrees in occupational therapy. Jantzen (81) urges graduate programs in occupational therapy that lead to specialization in psychiatry. Reilly (82) stresses the need for revision of the occupational therapy curriculum at a level of scientific knowledge upon which practice can rest. Azima and Azima (83) and Dunning (84) offer theories of psychiatric occupational therapy based on psychodynamic premises while Donger (85) expresses the opinion that occupational therapy has attempted at times to go further than the present state of understanding in psychiatry warrants.

Robbins (86) and Dodson (87) believe that the occupational therapist has special tasks. Robbins points out that inasmuch as the occupational therapist is involved in changing the purposes of the person with whom he wishes to communicate, it is essential that he cultivate effective techniques of communication. Dodson believes that the occupational therapist must help society to understand and accept the rehabilitated person. Rood (88) notes that for the occupational therapist to develop successfully, stimulation must occur both from within and without.

The A.O.T.A. has taken steps to reduce the discrepancy between occupational therapists needed and occupational therapists available by presenting a plan for the train-

ing and recognition of occupational therapy assistants (89). Such a program has been activated in Ontario (90).

Ellis and Bachrach (91) insist that occupational therapy cannot function as an independent unit in a hospital. They hold that its value is in direct proportion to the comprehension of and coordination with the psychiatric staff. Smith, Barrow and Whitney (92) find that attitudes toward occupational therapy differ among different types of psychiatric patients. Tibbs (93) discusses the creative impulse and its value in therapy and Brown (94) describes "psycho-iconography," a method "of communicating through drawings and pictures." With this technique the patient is encouraged to draw any picture he wishes and the therapist interprets symbols presented and thus becomes aware of the patient's inner life. Welsh (95) discusses the significant role which occupational therapy can play in the rehabilitation of alcoholics.

Two books dealing with occupational therapy published within the year have come to this reviewer's attention. *Changing Concepts and Practices in Psychiatric Occupational Therapy* (96) is an excellent presentation of current thinking as to how occupational therapy can best meet the needs of the hospitalized patient in terms of modern dynamic concepts. Rusk's *Rehabilitation Medicine*, referred to previously (65), has a chapter on the principles of occupational therapy.

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COMMENT

GENERAL MEDICINE BEFORE SPECIALIZATION

The age of specialization has created many problems. The most disturbing of these seems to be the apparent isolation of the specialist from man as a whole being, which narrows his perspective and limits his usefulness. The specialist in his zeal to know all about his specific field is in danger of concentrating on only a small part of man, thus dividing the whole into many small parts, each an island to itself. I believe that much of this tendency could be corrected without in any way interfering with the tremendous gains in medicine brought about by specialization.

My premise is simply that we permit specialization much too soon, long before mature judgment and clinical experience have become a part in that decision.

As psychiatrists, we stress the importance of our being acutely aware of the total person. Yet paradoxically we prejudice such a possibility from the onset by our approach to the training program. We do not give the young doctor an opportunity to learn firsthand the practical knowledge of his fellow man. From the very start of his academic career he lives a sheltered and isolated existence. His life is made up of school and hospital work; college, medical school, internship and then three to five years of intensive study confined to the area inside the cranium. And then when he finally starts to practise he usually limits himself to a further subspecialty!

I believe there should be a break in this academic routine of, say, two or three years, during which the young doctor will be actively engaged in the field of general

practice. No man can be a good specialist unless first he be a good doctor and is well grounded in all of man's basic problems. As I see it, knowing how man lives is the most basic of all the requisites to the proper understanding of man. And nowhere can one learn this as effectively and wholesomely as in the field of general practice. Years of hospital and university training can never prove an adequate substitute. Only through the broadening influence of coming in constant contact with man, his family, his social, physical and emotional states, his ticking as a whole man in his home and environment and not as an isolated part of himself, can a proper understanding be reached.

In addition, from the experience gained from a period of general practice will come the insight to guide the young doctor to the specialty wherein he will be best suited and happiest. His choice will come not from some preconceived idea or from what residency happens to be available, but from having practised all of the specialties daily he will have learned in which special field he is most talented.

And finally the barrier between the specialist and the general practitioner will be removed, for now the specialist is no foreigner speaking a foreign language but one who, having shared a common practical experience, can communicate with his fellow practitioners in understandable medical terms.

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CORRESPONDENCE

THE PRESENCE OF ADRENOCHROME IN BLOOD

*Editor, THE AMERICAN JOURNAL
OF PSYCHIATRY*

SIR: Recently Szara, Axelrod, and Perlin¹ reported in this journal that they had developed a sensitive and specific method for determining adrenochrome in plasma. Using this method, they found less than 20 $\mu\text{g./liter}$ of some nonspecific fluorescent substance. They therefore concluded that adrenochrome is not present in plasma. On the other hand, using an altogether different method, I have found in the method of Fischer, Derouaux, Lambot, and Lecomte², we have found that adrenochrome or something very much like it is present. The concentration is increased after giving volin-
d LSD 25, not after Brom LSD or LSD, and after the injection of solutions of crystalline adrenochrome intravenously.

We have now examined the method described by Szara, *et al.*³ and believe we have an explanation for these discrepancies.

We have compared both methods. In order to avoid the issue now whether adrenochrome is naturally present in plasma, we injected 10 mg. of authentic adrenochrome in saline intravenously into a schizophrenic patient. Ten minutes later, 20 mls. of blood was removed from the arm and placed in a flask containing heparin. This blood, known to contain adrenochrome, was centrifuged and the plasma divided into two portions. One portion was analyzed by our method and the other by the Szara method. The fluorescence readings are shown in the following table.

FLUORESCENCE READINGS (SAME SCALE) OF
ADRENOLUTIN FROM PLASMA CONTAINING
INJECTED ADRENOCHROME

	Our Method	Szara Method
Plasma and 1 $\mu\text{g.}$ adrenochrome	0.56	0.045
Plasma alone	0.31	0.0115
Blank	0.21	0.0090
Increase of plasma over blank	0.10	0.0025
Increase due to 1 $\mu\text{g.}$	0.25	0.0335
Apparent adrenochrome conc.	400	76
	$\mu\text{g./liter}$	$\mu\text{g./liter}$

With our method, the fluorescence increase with 1 $\mu\text{g.}$ authentic adrenochrome

was 0.25 units compared to an increase of 0.0335 units by the Szara method using the same scale on the Farrand Spectrofluorometer, i.e. the latter method yielded about $\frac{1}{8}$ the fluorescence. With our method, the plasma reading was 0.31 or 0.10 units above the plasma blank. With the Szara method, it increased 0.025. Our blank is high in this instance due to the high conversion of adrenochrome to adrenolutin in plasma. The blank or plasma when adrenochrome has not been injected is low.

The fluorescence readings by the Szara method are so low that it does not find adrenochrome. Thus blood known to contain added adrenochrome had 400 $\mu\text{g./liter}$ by our method and only 76 $\mu\text{g./liter}$ by the Szara method. This latter value is in doubt because the plasma reading was so close in fluorescence to the blank. If we assume the same ratio of sensitivity between the two methods then obviously plasma which would contain 50 $\mu\text{g.}$ by our method would have been less than 20 $\mu\text{g.}$ by the other method.

If therefore the Szara method is sensitive, ours is about 8 times more sensitive. If their method is specific, so is ours, since in both methods the specificity depends upon the conversion of adrenochrome into adrenolutin in the presence of ascorbic acid.

The Szara, Axelrod, Perlin method is therefore not sufficiently sensitive to help us decide whether or not adrenochrome is really present naturally in plasma.

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after it has been isolated. Dr. Hoffer has not published any data on the specificity of his method or on the identity of adrenochrome found in biological material.

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DR. KARPMAN'S BOOK : THE HANGOVER

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : In the course of many years of publishing, I have ere long resolved never to argue with a book reviewer. They are a peculiar lot, have a peculiar psychology all their own, and to argue with them is like trying to break through a Chinese wall. But one has to correct an error which is so glaring and obvious. In the review of my book, *The Hangover*, by Dr. Stephen Fleck in the August number of the Journal, the statement is made that the hangover is not otherwise defined, suggesting that there is no definition given. This is absolutely untrue. On page 521 of the book I give more than a half page definition of the hangover, clearly titled "definition," which is the result of the many definitions which grew out of the material of my patients. Additionally, I also have explained the meaning of the concept on pages viii to xi which the reviewer has apparently overlooked. How does it happen that a book that gives almost a page of definition has escaped the notice of the book reviewer? The explanation is found in the fact that by some oversight, the word definition did not appear in the index. The reviewer is apparently the type of man who does not

read carefully the book from cover to cover as one should, but depends upon the index and the table of contents. If the index does not contain the word definition, then in his opinion a definition is never given, which is incorrect at least in this instance.

In another place, the reviewer further states that there is no description of the method whatsoever. I would assume that the reviewer is a psychiatrist who knows how to interview people. This work was done by a combination of interviewing and writing. My approach was that of a clinical researcher, the purpose of the book, as the title suggests, being to examine the meaning of the hangover as a psychological phenomenon. The hangover was made the variable while all the rest was left constant. Therefore, my main concern was that of eliciting the hangover and not to be concerned with secondary considerations of family relationships, and so on. This should belong to and is planned for another study.

It would be tempting to go through the whole review and point out the inaccuracies, but I am chary of the space that an editor can afford to give to the correction of an error.

Benjamin Karpman, M.D.,
Washington, D. C.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : Thank you very much for the opportunity to respond to Dr. Benjamin Karpman's letter criticizing my review of his book *The Hangover*, but I believe the value of the book and the pertinence or imper-

tinence of the review can be left to the judgment of the readers. May there be a lot of the latter whose lot is not that of the reviewer.

Stephen Fleck, M.D.,
New Haven, Conn.

NEWS AND NOTES

AMERICAN BOARD FOR PSYCHOLOGICAL SERVICES, INC.—The Board has released its 1960 *Directory of American Psychological Services* which is a voluntary listing of agencies and individuals providing competent psychological services. These services are listed alphabetically by state or province and city, with all necessary data. There is also a geographical listing of the diplomats of A.B.E.P.P. Most of the states and 3 Canadian provinces are included. Copies may be obtained from the American Board for Psychological Services, Inc., Glendale, Ohio, for \$1.50.

DR. BOWMAN AGAIN IN THE FAR EAST.—Dr. and Mrs. Karl M. Bowman sailed on November 5 to the Far East where he will again be Visiting Professor of Psychiatry at the Siriraj Medical College in Bangkok. He will be occupied in this work until about the first of April.

WORLD FEDERATION FOR MENTAL HEALTH.—At the recent meeting of the World Federation for Mental Health, William T. Beaty, II, Assistant Executive Director of the New York State Association for Mental Health of the State Charities Aid Association, was elected President of the United States Committee of the World Federation. Re-elected were Honorary Presidents Mrs. Clifford W. Beers, Dr. Earl D. Bond, Mrs. Henry Ittleson and Dr. Arthur H. Ruggles. Other officers elected were Mrs. Jonathan Bingham, Chairman of the Governing Board and Mrs. George A. Stern, Chairman of the Executive Committee; Dr. Robert L. Sutherland, Treasurer and Dr. George S. Stevenson, Assistant Treasurer. Newly-elected to the Governing Board were Dr. Margaret Mead, Dr. Bertram H. Schaffner and Lewis Cullman.

DR. RUGGLES HONORED.—At the first meeting of the Rhode Island Branch of the American Psychiatric Association, October 26, 1959, Dr. Arthur H. Ruggles, past president of the American Psychiatric Association

and former superintendent of Butler Hospital and Emma Pendleton Hospital was the guest of honor. A library in the new wing of the Fuller Memorial Sanitarium, South Attleboro, Mass., was dedicated to Dr. Ruggles. He presented a portrait of himself which will hang in the new library.

Dr. Lawrence Senseman, medical director of the Sanitarium, read the tribute to Dr. Ruggles. An outstanding figure in American psychiatry, he has been a true friend to all of us in our psychiatric youth and maturity. He has always been the friendly advisor, liberal in his encouragement, ready to give wise counsel when needed."

Officers of the society for the forthcoming year were elected as follows: Dr. David Fish, president; Dr. Barry Mongello, vice-president; Dr. Joseph Zucker, secretary-treasurer; and Dr. Sidney Goldstein and Dr. Laurence A. Senseman, counsellors.

THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.—The following candidates were certified by this Board after examination in Chicago, Ill., October 19 and 20, 1959.

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PSYCHIATRY AND NEUROLOGY

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DR. FORET HEADS DE PAUL HOSPITAL—
 Dr. Justillien H. Foret has been appointed medical director of De Paul Hospital in New Orleans to succeed Dr. Walter J. Otis who died in June 1959.

Dr. Foret, a graduate of Louisiana State University Medical School, had his psychiatric training at Worcester (Mass.) State Hospital, served five years as clinical director at Blythewood Sanitarium, Greenwich, Conn. and since 1952 as clinical director at De Paul Hospital.

COL. GLASS RECEIVES THE GORGAS AWARD.
 —Col. Albert J. Glass, chief psychiatry and neurology consultant to the Army's surgeon general's office, has received the Gorgas Medal for his pioneer role in preventive psychiatry.

The Gorgas award, consisting of a silver medallion, a citation, and a check for \$500, was presented during the annual dinner of the Association of Military Surgeons in the Mayflower Hotel, Washington, D.C., November 12, 1959.

Dr. Glass, a veteran Army psychiatrist, is the 17th recipient of the Medal, presented annually for distinguished service in military medicine. The award is made by Wyeth Laboratories in memory of Surgeon General William C. Gorgas, whose work in controlling yellow fever made possible the construction of the Panama Canal.

In presenting the Medal, Dr. Robert S. Warner, a member of the Wyeth medical staff, stated that Dr. Glass' studies during World War II and the Korean Conflict resulted in a substantial reduction in combat time lost by victims of psychiatric disorders. In the peacetime Army, his work has been credited with an all-time low in the number of men hospitalized with such disorders and the number of offenders imprisoned.

During World War II, Col. Glass was an Army division psychiatrist and in the Korean Conflict was chief neuropsychiatric consultant to the Far East Command.

During his 18 years with the Army, Dr. Glass has been associated in executive capacities with the neuropsychiatric programs of a number of Army hospitals, serving most recently as chief of the neuropsychiatry department of Walter Reed Army Hospital.

His decorations include the Legion of Merit and the Bronze Star.

ASSOCIATION FOR THE ADVANCEMENT OF PSYCHOANALYSIS, INC.—The Association announces the eighth annual Karen Horney Lecture to be given by Dr. David McK. Rioch, director of neuropsychiatry at Walter Reed Army Institute of Research. The title is "Recent Contributions of Neuropsychiatric Research to the Theory and Practice of Psychotherapy." The meeting will be held on March 23, 1960 at 8:30 p.m. at

Hosack Hall, at the New York Academy of Medicine, 2 East 103rd Street, New York City.

NATIONAL MENTAL HEALTH RESEARCH FUND, CANADA.—The Canadian Mental Health Association, who have set up this research fund, announce that a grant amounting to \$22,500 for the ensuing year has been awarded to Rev. Dr. Noël Mailoux, director of the Human Relations Research Centre in Montreal. The subject of investigation is the personality of delinquent boys with a view to their proper treatment in custody.

Realizing that annual or biennial government budgeting, by necessity, produces "project" or short-term research and that uninterrupted work is also necessary in mental health research, the Canadian Mental Health Association voted in 1957 to establish a fund to this end, so that researchers can work unencumbered by the uncertainty of annual budgets or red tape. Grantees are protected for the period agreed to (usually 5 years). Those who wish to devote a considerable period to research in this field may apply by personal letter to the Director, The National Mental Health Research Fund, The Canadian Mental Health Association, 11½ Spadina Road, Toronto 4, Ont.

The general director is J. D. Griffin, M.D.; senior staff, G. A. Gamble, E. Johnstone, G. Rohn; consultants, C. M. Hincks, M.D., W. Line, Ph.D.

HABIT

Habit is a cable; we weave a thread of it every day, and at last we cannot break it.

—HORACE MANN.

BOOK REVIEWS

ENCYCLOPEDIA OF MORALS. Edited by Virgilus Firm. (New York: World's Planned Library, 1958, pp. 682. \$10.00.)

Johnson says that morals (noun, without a singular) is "the practice of the duties of life ; . . . with regard to others." The Latin *moris* is merely which simply means manners. The English word morals is likely to mean not only manners but good manners sometimes even with a religious overtone. The theoretical aspect of communal living is the province of the philosopher while the common practices of ethnic groups in their daily life fall to the anthropologist. It is he who observes the beginning of religious beliefs and practices.

This encyclopedia covers the whole range of human attitudes ; it includes the doctrines of the major religions insofar as they do not overemphasize supernaturalism "as over against the day-to-day existence of the natural order." The material of the book is contributed by 52 carefully selected authors from a dozen fields, philosophy being in the majority, with anthropology and religion or theology following. The leading colleges and universities of America are represented by this panel of writers.

The subject matter is arranged alphabetically, with many cross-references, thus assuring access to almost any topic about which the reader may seek information whether it is given a separate alphabetical entry or not. Major topics and important personalities are given fairly extended treatment in their regular alphabetical order.

Thus the first longer item, *Aboriginals of N. Australia*, is given 8 double-column pages. Then, after 101 title entries with references to topics under which the subjects are treated, follows a 12-page article on Thomas Aquinas. Other longer items under *A*, are *Aristotle* (9 pp.), *Augustine* (6 pp.), *Aztec morals* (4 pp.). If one wants to find out about atheism, the title entry refers, curiously enough, to Spinoza (the "God intoxicated"). (8 pp.). Here we learn of Spinoza's excommunication as a heretic by the Jewish authorities in Amsterdam, and of the storm that broke over his head when he published his "blasphemous," "godless" book, *A Politico-Political Treatise*, wherein he declared "that freedom of thought and speech not only may, without prejudice to piety and the public peace, be granted ; but also may not, without danger to piety and the public peace, be withheld." Spinoza's mas-

terwork, *The Ethics* is also analyzed here.

The last of the longer articles in this book deals, in 7 pages, with the morals of the Zuni Indians of the S. W. United States where the Spaniards found them in the early 16th century and where they still live—an area occupied by American Indians for the past 15,000 years. Ruth Benedict characterized the Zuni as "Apollonian," followers of the middle way—moderation *vs.* excess ; strict ritual *vs.* mystic ecstasy ; compromise *vs.* competition ; community welfare *vs.* individual exaltation.

Professor Firm has assembled a vast amount of information in his Encyclopedia which will throw light on almost any subject in human experience in this field. It is an excellent book of reference, exemplifying the Johnsonian definition of morals. By alphabetic accident the book begins and ends with societies called primitive or savage. Between these are discussed the mores of the partially civilized peoples of the world, thus completing the picture of human society to date.

C. B. F.

THE ANATOMY OF THE NERVOUS SYSTEM. Its Development and Function. 10th ed. By Stephen Walter Ranson, M.D., Ph.D. Revised by Sam Lillard Clark, M.D., Ph.D. (Philadelphia and London : W. B. Saunders Co., 1959, pp. 622. \$9.50.)

Since this textbook first appeared in 1920, it has held its pre-eminent place with students and teachers of neuro-anatomy. The present reviewer welcomes this opportunity of acknowledging his debt to Ranson as the book on which his undergraduate lectures have been based since 1923.

The book has become a little stouter over the years but, under Dr. Clark's skilful guidance, this has been kept within bounds. This edition contains only 41 more pages than the previous 1953 revision.

The chapter on "Meninges and Blood Vessels" has been expanded, mainly by 3 additional pictures, to emphasize the increasing importance of angiography and venography. Six electron micrographs have been added to the chapter "Neurons and Neuroglia." New material is also found in the "Rhinencephalon" and "Cerebral Cortex" chapters.

The quality of both the black and white and the coloured illustrations is improved.

ERIC A. LINELL,
University of Toronto.



GREGORY ZILBOORG

IN MEMORIAM

GREGORY ZILBOORG: A MEMORIAL

1891-1959

Gregory Zilboorg is intensely and fully human in his reaction to the vicissitudes and unpredictability of existence and life to think in terms of varied categories. Also, in its turbulent career, Zilboorg is noted to excite emotional responses in its beholders, among them admiration, usually unexpressed; antipathy, usually openly expressed; envy, disguised; and occasionally loyalty and affection, which, when once called forth, are held deep and lasting. Gregory Zilboorg was of the species genius; he had all of its trap-pings and he called forth all the responses connected with it. When he died on 17 September, 1959 American psychiatry lost one of its most brilliant, stimulating and colorful figures.

Born in Kiev, Russia, in 1891, his was a veritable story book career. Before he was twenty-five years old, he had served two years in the medical corps of the Czar's army, received a medical degree in St. Petersburg, participated in the Russian revolution of March 1917, become Secretary to the Minister of Labor in the Cabinets of Prince Lvov and Alexander Keren-sky, and been dismissed by the Bolsheviks following upon their successful coup in November, 1917. Eventually, like numerous other intellectuals, he was hounded from Russian shores.

Upon his arrival in this country, Zilboorg supported himself by lecturing, writing and translating for the theatre, while he studied medicine for the second time at Columbia University. The medical degree from Columbia was granted in 1926 and he began his psychiatric career as a member of the staff of Bloomingdale, which is now known as The Westchester Division of the New York Hospital. He remained there until 1931, with time out for psychoanalytic studies at the Berlin Psychoanalytic Institute in 1929-30. From 1931 on he was engaged in the private practice of psychoanalysis and psychiatry in New York City.

To list Dr. Zilboorg's contributions to

clinical psychiatry within the history of the field is to attempt the impossible. A listing of his many varied contributions to the field of psychiatry, in its various branches, is not only impossible, but also unnecessary. His work, in its many varied categories, the contributions awarded him were diverse and numerous. To mention a few: he was a National Lecturer at the Harvard University Medical Association, President of the American Psychiatric Association, and President of the American Psychiatric Association. He was a member of the American Psychiatric Association, and a member of the International Association of Universities. His lectures delivered in Paris, London, Madrid and Rome.

In 1935 Zilboorg's book *The Mind of Man and the Mind of Man*, the first of his contributions, appeared. Six years later his second contribution, *The History of Medicine, Psychology*, was published and by means of it his place in the ranks of medical historians became assured. Then in 1943 the brilliant work, *Mind, Medicine and Man*, was printed and one year later the Centennial Volume of the American Psychiatric Association, entitled *One Hundred Years of American Psychiatry*, with Zilboorg as co-editor, took its place among the required readings of psychiatric literature. In 1953, as fruit of his Isaac Ray Lectureship award, his book *The Psychology of the Criminal Act and Punishment* was published.

In his hospital and teaching career Dr. Zilboorg's appointments and accomplishments were likewise diverse. He taught psychotherapy at Butler Hospital, an institution which he loved and in which he had created the Isaac Ray Library. He held professional rank in several New York medical schools and was Chairman of the Consulting Delegation on Criminology to the

United Nations. One honor which he held in high regard was the degree of Doctor of Science which was awarded him by the University of Dublin in Ireland in 1954.

If it is true that capacity is but an aptitude to receive, then Gregory Zilboorg had a capacity which was infinite, one which sought satisfaction by the mastery of the widest variety of skills. He was a psychiatrist, a psychoanalyst, a criminologist, a medical historian, a linguist, a brilliant lecturer, and a writer of essays on psychological and religious issues. He had a facility for apt expression, an ability as a phrase-maker, and a ready humor. Not content with these accomplishments, he became an expert photographer, a craftsman with wood, an excellent cook, and a bibliophile. It is not without reason that Mora spoke of him as a "Renaissance Man."

It is interesting, as Mora also points out, that as he became older his introspective urge seemed to increase and his life became a progressive saga from outward interests (politics, drama) to psychological and social interests (psychoanalysis, criminology and medical history) and thence, in the last few years of his activity, to that most internal of all interests, a profound concern with affairs of the spirit and religious and moral issues. Concomitant with this latter interest, he lectured extensively at Fordham University and Woodstock College in Baltimore and collaborated in the commemorative volume for Pius XII in 1956 and wrote several important papers dealing with religion and psychoanalysis. His volume entitled *Freud and Religion* was published in 1958.

To see this complicated and brilliant man at his best, one should have seen him with his lovely wife and the young family, of which he was so proud. Or perhaps one might have caught glimpses of him in quiet conversation in out of the way places—in restaurants in Europe, or in some place where the klieg lights were off and the tensions removed. Whereas in the arena of psychiatric meetings he reacted with unbelieving and hurt surprise to those who challenged him, in the situations mentioned above his genius became apparent and a brilliant, warm, understanding and kindly man emerged.

Upon his return from Europe in July, 1959, his condition was diagnosed as inoperable. He knew about it and, with a quiet dignity, he set about to put his affairs in order. He was subdued by the imminence of death, but there were no complaints and no lamentations. This writer sat with him as his end approached and was moved by the clarity of his thought as he discussed various philosophical problems and recounted how he, in his "rebellious Dostoyevskian fashion," finally arrived at his deep spiritual convictions. His last psychiatric concern was an admonition regarding the protection of psychologic test records of students from improper hands, for the student might later become the president of the university. Thus, this genius which found its own road and carried its own lamp through a turbulent career died serene and with a concern for the dignity of the individual and his right to privacy.

Francis J. Braceland, M.D.

ADOLF MEYER RESEARCH LECTURE

WHERE VITAL THINGS HAPPEN¹W. GREY WALTER, Sc.D.²

The great honor of delivering this lecture is a very personal one, since Meyer was one of the first to recognise that physiology must itself evolve in order to encompass the problems of mentality, and so I may dare to assume that you as psychiatrists consider my particular brand of physiology sufficiently advanced to meet the exacting requirements laid down a generation ago by the man whose name we honor today.

The title for this lecture is taken from a passage in a paper by Adolf Meyer on the scope and teaching of psychobiology(3).

All the writings of Adolf Meyer are so full of scholarship, so well informed, so original, so passionately sincere—and so up-to-date that I could easily fob you off with a series of quotations from them—it is hard to find any subject related to mental activity and brain function that is not dealt with in some part of Meyer's work. The particular passage from which I have taken my title is concerned with the integration of mental function and if you will permit me to quote further extracts, these will outline vividly for us the scope and purpose of this lecture.

We must establish the habit of scrutinising the facts and factors . . . It is certainly not mere physiology. It is . . . thought of in settings for which physiology does not have any terms and for which it does not cultivate adequate terms . . . This requires experience with both facts and methods and this requires superfluous practice and not mere "thinking" and reading and talking. Yet it is just this kind of functioning which we may have to review . . . *We must turn to where vital things happen, where they have their beginnings and developments. And this is not so simple . . .*

I find some cause for pride and comfort too in sharing with Meyer a mixture of European and American influences. Although our work paths moved in opposite directions, our cultural plans are similar. Like Meyer I have genetic roots in Switzerland and educational origins in the Mid-West—though I have the additional advantage of having been born in the heart of America. Like him too I have a great distrust for the tyranny of words and I echo with feeling his expostulation "When it comes to psychobiology, I wish it were possible to get rid of the words and get the sense to unprejudiced readers." I support with enthusiasm his exhortation "It is always wisest to pay attention to the whole range of factors" but like him I can see very clearly the colossal difficulties that anyone who tries to see men steady and see them whole must overcome. Endeavors in this field are not likely to attain the critical mass for an explosion into front page glamour, nor can we easily attract by horror by "nostalgie de la boue," those who have committed themselves irrevocably to what Meyer dismisses as "The imagined cesspool of the Unconscious."

Perhaps the most encouraging and reassuring acknowledgment is the sentence found in one of Meyer's diaries, which I can repeat with calm assurance—"I am glad that I have decided to study the whole of Man."

During the 14 years that have passed since the end of World War II, psychobiology has developed beyond the hopes and expectations of the early pioneers. As always we must acknowledge the powerful and perpetual stimulus provided by the technological advances evoked in military emergency. Equipment which we now consider conventional and basic would have been a crazy dream 20 years ago. With the

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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elaboration of apparatus has gone a vast multiplication of research centers and specialised techniques. At the outbreak of war in Europe there were perhaps half a dozen tiny nuclei of psychobiological research, scarcely **worthy of the name laboratory**. Now there are hundreds scattered all over the world, some concerned mainly with the strictly clinical and urgent necessities of diagnosis and treatment, others entangled more subtly with the delicate problems of individual behavior and social relations envisaged by Meyer, never before so clearly defined and so tantalisingly near solution.

As Meyer knew, this is certainly not mere physiology; neither our training nor our inclinations have fitted us for this task, and we know that we are entering a new domain with no credentials or passport other than an insatiable hunger for self-knowledge and a limited capacity for self-discipline. The physiological laws on which we were nurtured do not run in this realm where the individual is king, since they ignore idiosyncrasy. Nor can we rely on the statistical conventions with which we have tried to overlay the doctrinal barriers between our disciplines, for these too are better adapted to the effacement of individual variations than to their clarification. What is the source of these difficulties? Why have our physiological excursions into the domain of mentality been so crudely empirical or at the best intuitive and inductive? At the present time there is still not one single principle of mental physiology that can claim the status of a natural law, in the sense that it receives universal acceptance and permits deductive prediction or extrapolation.

The main theoretical difficulty is that the classical methods of scientific study, inherited by physiologists from their intellectual forbears in the basic sciences, depend on the isolation of a single variable in large-scale simple systems, or, in the special case of contemporary physics, the unidentifiable elements in complex micro-systems. Neither of these methods is directly applicable to the problems encountered in psychobiology, which deal with large-scale complex systems of heterogeneous elements, interacting freely with one an-

other through probabilistic links, the vast majority of which are quite inaccessible even to the most delicate probe. Human brains are, in the terms used by theoretical physicists "immense systems" and it is doubtful whether there are enough of them to permit generalisation. This may sound absurd—there are over 2,000 million human beings around us and surely, we may say, this constitutes a large enough population to yield a suitable sample. But this is not necessarily so. Let us consider the sort of system we are dealing with. You may have recognised the definition in the preceding paragraph "complex systems of heterogeneous elements interacting freely with one another through probabilistic links" as applying to human nervous systems—it also applies of course to human societies. But what do we mean by complex, and what is the order of complexity? Anatomists tell us—and in this case we may believe them though their data are from material they describe euphemistically as "fixed"—that there are at least 10,000 million neurones in our brains. This is not really a very large number by cytological standards—less than the number of red cells in our blood stream—but what we have to consider is that these elements are interconnected in various ways. The cells in our blood or skin, even in the other great internal organs, are working essentially in parallel, one may say: they are not in any useful sense a community. The relations between the cellular elements in other organs depend only on two factors, contiguity and atmosphere, that is the nature of the fluids that nourish or control them. All cells have a climate and some degree of neighborliness, some participate in a serial fashion in functions such as movement or digestion, but only in the central nervous system do we find the texture of interlaced channels of communication that merits the term *complexity*.

The effect of this inter-connectedness can be estimated numerically, with some reserve on the grounds of our ignorance, but with enough confidence to illustrate the scale of the psychobiological problem. Starting with a complex system containing only two elements and allowing only the minimal degree of structuring and quali-

tative system, we find that already we have some 7 possible modes of behavior or dynamic states. Perhaps it is worth repeating in illustration I have given before of what this means in practical terms. Suppose that our two elements are not neurones in a nervous system but human beings, say a man and his wife forming a household and that we play the role not of impersonal physiologist but of crafty burglar. Before we make our entry to this little system we must "case the joint" to see what possibilities exist. We shall note the following modes of existence in the household; the zero mode O—when both husband and wife are asleep, mode A when the husband is at home alone, B—the wife alone; A, B—both at home but isolated from one another, $A \rightarrow B$ —both at home with the husband addressing his wife, $A \leftarrow B$ —the same but (some would say more probably, with the wife addressing the husband, and finally $A \rightleftharpoons B$ —the same but with the couple in mutual converse. As a criminal objective we would recognise the first and last modes as most promising for our purposes. In the other modes either or both human elements would be attentive to outside stimuli, but in sleep—or death—and when preoccupied with each other, the two element systems cannot attend to external matters. Note that this variety of modes is established without recourse to external intervention. If we introduce this the difficulties increase very rapidly, as for example, when both elements are distracted by a common external stimulus (watching television is the obvious analogy). In these circumstances again we may plan an unobtrusive entry.

This little allegory may seem far-fetched to some of you, trite and trivial to others, but I think it is worth spelling out what we mean by complexity because it is a word that is often used casually and sometimes as a pretext for defeatism in psychobiology. The important point is that the complexity of our neural and social apparatus can be estimated, so that, having appreciated the situation in terms of the strength of the opposing forces, we can more confidently plan our strategy and tactics for a better co-ordinated and more economical assault.

Clearly, we shall be wasting our time if we try to attack such problems by a simple multiplication of conventional weapons. Our losses in treasure and morale would be too high and we should give away our own position completely. This is a very serious problem in the design of experiments, the interaction between observer and observed, and it is particularly insidious in situations where organisms attempt to study others of the same species—as psychiatrists know so well. The techniques of psychoanalysis have been criticised and ridiculed on many occasions and we must all admit that certain aspects of them are open to ribald and satirical caricature. None the less the detachment and apparent indifference of the analyst, his patience and carefully cultivated impersonality, which so enrage or discourage some patients, are derived from the laboratory rather than the clinic, and are to be commended by all who claim a scientific education in detachment, patience, humility and serendipity.

In more sophisticated and modish terms, how are we to ensure that information flows from the complex system under scrutiny—the human being—to the observer, the clinician or scientist and not in the reverse direction? As I have said, you as clinical psychiatrists achieve this by experience and endurance. Your experience of patients tells you more about the likely behavior of patients than your patients will know of the behavior of psychiatrists. You have real case histories, they have only the comic strips and the public library. Your endurance ensures that you will outlast the longest silence and appreciate the most frivolous chatter. As well as these Fabian tactics you also have in reserve a variety of physical stratagems to soften up the taciturn and quell the garrulous. And all the time you can observe the subtle display of bodily changes, the gestures, fidgeting, sighs and changes of color that provide the trained clinician with a running commentary on his patient's state of mind and feeling. In all this, your clinical art, you have a sort of information valve, a one way rectifying and amplifying device that should bring you some understanding even if it does not always give you the power to

control or heal. And above all, you retain appreciation for the individual—you may sometimes think something like “this is typical of an endogenous depression” but more often you say “this is how *this* patient shows that he is depressed.”

Now at last in our experimental work we are trying to emulate these faculties of yours, but we have some difficulties that you have not, and some resources which you could not use. Where you communicate mainly through language with all the ambiguities and romantic overtones that this implies, we try as well to include in our survey the patterns of electrical change within the brain. Furthermore, accepting the importance and validity of the unrehearsed and uncontrollable activities of the autonomic nervous system, we take pains to record and correlate with all the other information the changes in heart and lungs, skin and blood vessels, eyes and muscles that reflect, albeit obliquely, the swirling tides of passion so well contained and disciplined by the well-drilled supervision of the neo-cortical networks.

As you know, this mechanisation of our scientific armament has involved the deployment of heavy pieces of technical artillery. This apparatus again is, in effect, an amplifying valve to direct and concentrate the flow of information from subject to observer, but the interaction problem becomes even more subtle and serious. We cannot conceal our strength by discreet withdrawal out of view; our subjects are constrained by manifold appliances which we make as inconspicuous as possible, but they are still obtrusive. So, whether we like it or not, our subjects gain some information from us, and we counter by certain mild deceptions which in the military tradition divert attention from essential manoeuvres to trivial ones.

In the early phases of these researches, we and most other investigators, with echoes of our statistical courses ringing in our ears, attempted to reduce or systematise the immense amount of objective data we amassed by conventional procedures, but as I have already affirmed, this is a vain exercise. There is no more justification for say, computing the average frequency of a brain rhythm than there is for counting

the syllables in a patient's verbal complaint. As in recognising speech, it is the pattern and cadence that we must attend to rather than the elementary numerical features. This is easily said, but to achieve it we must discard many of our most trusted tools, go back to school, learn new tricks, sit meekly at the feet of the great clinical scientists who can still detect the patterns of variation, the syndromes of pathology that enrich the palette and guide the brush of the clinical artist.

For, though our concern is mainly with our normal fellow beings, the attitude we have to adopt is essentially a clinical one, even if the signs and symptoms are filtered through miles of wire and paper and displayed as lifeless figures and graphs. This is not to say that we choose to ignore the qualitative human factors in favor of the objective readings of our instruments; on the contrary our task is to relate the two classes of observation in such a way as to confer depth and perspective without freezing the picture into a meaningless and inexpressive pose. It is in this composition, framed in the regularity of science but with all the gentleness and variety of human feeling that we must try to find where it is that vital things have their beginning and their development.

We can be sure that Meyer chose this word “vital” deliberately for its double meaning; the things that concern us are both important and lively—but what, for our purposes, is important and what is life? Not all important things are alive and not all living things are important—or are they?

We must select some aspects of living things for their importance and we must be sure that they are important in more than a local, temporary and eccentric way. The history of science is littered with the relics of “important” ideas and “facts” that later generations discarded as superstition and illusion. So often too we are misled by technical virtuosity or verbal fluency. Have we not all spent months of our professional life struggling with scientific rhetoric or groping among instrumental cobwebs? Perhaps in another generation or so our mathematical colleagues will come to our aid with new, more comprehensive and comprehensible algebras that can express our

ideas and condense our observations without straining too much our already stressed understanding.

At the present time I think we have only one way of dodging between the glorious earthy ambiguities of the vernacular and the serene unintelligible abstractions of mathematics—to crystallise our ideas into working models, material analogues clean shaven by Occam's razor, clear, simple, unequivocal and like crystals, brittle, so that when our hypotheses break down as they always will, they shear with a clean snap and do not yield and flow as words and phrases do. Some of you have seen examples of what I mean by working models and many of my colleagues now feel as I do, that this is the only trustworthy channel of communication between the allies in this no man's land of science. If these devices seem only frivolous to you, then look and listen more closely; like telegraph operators in an idle moment we sometimes indulge in friendly chatter to keep the line alive—we all enjoy a gossip and a family joke. But in between the puns and jingles you will find messages of the most serious and strategic import. What are these messages and what action do they demand?

Without going into laborious detail, I can outline quite briefly the ways in which study of artificial animals has helped to direct our attention to truly vital things. First, we can distinguish and define more clearly those aspects of behavior that are specifically in the vital class. It is not so long since such phenomena, as goal-seeking behavior, self-regulation and self-repair, appreciation of optima, logical decision, free choice between equiprobable objectives, the identification of self, the development of personality, the formation of co-operative communities, modification of behavior by experience, and so forth were assumed to be uniquely the attributes of living creatures. But now all these and much besides are known to be imitable by artificial creatures. Indeed some of these functions are performed far more accurately and consistently by artefacts than by animals or men. In some cases, for example, the regulation of complex processes, arithmetic, logical analysis, are now delegated

almost exclusively to non-living contrivances; in others the demonstration of mechanical competence is on a model scale. If no one has conceived a machine like a man, it is because the human market is already saturated and the conventional means of production satisfy other needs at the same time.

These practical developments and the theoretical inferences from them may seem to lead to the conclusion that no important differences are to be found between living and non-living systems. But this is not so—what seems to be nearer the truth is that there is a continuum or spectrum of intricacy, with our simplest contrivances in a class at one end and ourselves and any superior beings in another class at the other. Between these extremes there are imperceptible gradations of liveliness; at the lower end it would not be worth living and the higher end would not be worth imitating. Is this gradation merely one of scale, or are there fundamental differences of quality between the extremes? Scale differences there certainly are; the simplest creatures in flesh or metal are also the smallest, the commonest, the most easily imitated. We human beings and our more elaborate domesticated machines are in comparison large, rare and expensive. But this is not an adequate scale; the largest animal is a basically very simple jelly-fish with a very limited repertoire of behavior patterns, and some quite tiny missiles have a very delicate sensibility for worth-while targets. We cannot overlook, even in the metal, certain powers that are more than algebraic. There are several modern thinkers—and experimentalists—as well as the majority of the ancients, who have felt that these peculiar properties of what we may call immensely complex systems justify the enunciation of special principles, distinct from and perhaps transcending, the laws that permit us to explain and predict the behavior or simpler systems. One of the most distinguished of those recently involved in this dispute is Elsasser(2). This is a very solemn decision to make—we dare not join the ranks of the vitalists unless we are prepared to surrender all our scientific freedoms, and we must consider this challenge seriously. What are the special

powers that make some living things such as ourselves so intractable to physical law? The first that should occur to us is reproduction. This is not the theme of my discourse and we may put it on one side for meditation, but I should like to remind you that organic reproduction is not necessarily replication, and the more complex the system the less perfect the copy of design from one generation to another. Animal breeders would be very happy if this were suddenly not so; they could specify a champion from sire and dam, but if it were not so they would never have had the opportunity to breed the champion stock at all. Charles Darwin, a century ago, was very much concerned with *variation* in the origin of the species and this uncertainty of reproduction seems rather to have been neglected by those who find the process inexplicable in physical terms. The information transmitted from generation to generation is vast indeed, but highly corruptible—by no means every mating is fertile and many even of our own progeny are monstrous. In the fertile union of human gametes there is embodied only a high probability of human issue—even the sex of the newcomer is just a little blurred, not sharp and exclusive as was once supposed.

I have mentioned this problem only to dismiss it, but in the hope that it may serve to introduce in an obviously relevant and verifiable context the notions of probability and variety which are of paramount importance in the next subject we must consider, the central and practical theme of this lecture, that bundle of concepts and speculations that we may enfold in the terms Learning, Memory, Motivation, Imagination, Originality and Personality.

This is dangerous ground, but we must cross it to reach a firm basis of mutual understanding; so as a physiologist, I choose to rush in where even some philosophers have feared to tread. We have already considered the special complexity of the system we are attacking and the weakness of our traditional tactics. What can we bring up in support? Our first step must be to find out what we can observe and measure and then see how our observations can be welded into some sort of coherent theory or hypothesis. The first process is

sometimes referred to as the Identification of Operational Parameters. What operational parameters can psychobiological research establish by experiment and analysis, and how do these relate to the concepts abstract or empirical, derived from other sources?

I have described elsewhere the ways in which we have tried to systematise our observations of changes in human brains and bodies during experimental tests of function; we have suggested that the following parameters could be used to classify and correlate such data; Versatility, Imagery, Stability and Ductility. Let us consider some of these. Versatility was chosen as a term to indicate the extent of variation in an organism's behavior, the repertoire of response patterns in a given situation as compared with the repertoire of other individuals. This notion was derived from experimental studies of brain activity and behavior of normal people performing tasks which in effect challenged their powers of understanding and control but left them free to gain control in any way they pleased. The objective evidence of personal variations was from analysis of brain activity computed automatically and repeatedly so as to provide statistically significant figures; this analysis was found to be related to the repertoire of ideas and actions of the individual in such a way that a high variance of brain rhythms was correlated with a large repertoire of behavior, while monotonous, invariable brain activity was associated with a stereotyped and highly specialised habit of behavior. Over the whole range of variation, the "intelligence" of the subjects was high and their personalities were within normal limits by psychiatric standards; this parameter is not related to how well adaptation is achieved but rather to how it is attempted and in how many ways it is achieved. There are obvious relations here to other concepts, for example, to the Pavlovian parameter of "lability" or "volatility," which Pavlov considered high in both strong, choleric or sanguine types of dog and in weak melancholic ones, but low in the strong phlegmatic temperaments. An even more significant and general similarity is to the Law of Requisite Variety enunci-

ated by Ashby (4) and which he again compares with the concepts of Sommerhoff (5) and with the principles derived from the Communication Theory of Shannon (6).

The Law of Requisite Variety states that if a complex system (for example a human being) is attempting to control the outcome of a situation, then that system must have an intrinsic capacity for variety that matches the variety of the situation. This is because "control" means reduction of the number of possible outcomes of the situation to a certain smaller class which are generally described as Good or Correct. In a real complex life-or-death situation a system with the requisite variety will be able to survive by finding an appropriate mode of response, while another with inadequate variety can make fewer responses with a correspondingly smaller chance of survival. In the experimental conditions of our investigations, survival is not at stake, but the situations are deliberately contrived so as to be ambiguous and to offer the subjects several modalities of stimulus and response as a means of avoiding a disagreeable penalty, or achieving formal gratification. Some choose one way, some another, some use parts of all the types of information, some vacillate between one extreme preference and another. This is not surprising or novel, but the important observation is that the character of this response complex is related to the features of the intrinsic and evoked activity in the brain, and to the manner of participation of the involuntary mechanisms mediated by the autonomic nervous system.

Our early experiments on these lines suggested that adaptive behavior of this type, closely analogous to and probably homologous with the formation of conditioned reflexes, is essentially a statistical process, which involves first the selection of relevant information from the background of "noise" or random change, second the storage of the information so selected and classified, and third the combination of the stored select information with fresh events or disturbances, so as to provide a relevant and effective behavioral control. This hypothesis too I have elaborated elsewhere; what concerns us here is the evidence that in human

beings there is a wide variety of detail in the way these processes are carried out. The principles—one might say the mathematical laws—according to which information is selected and stored, are probably universal and ineluctable, but the way in which the principles are applied by any particular nervous system is a very personal matter.

The personal preferences and idiosyncrasies that intrigue us so much in daily life and baffle us so profoundly in the laboratory can be seen even in the mechanical devices we have made to embody these hypotheses. There are at least half a dozen machines in existence which imitate quite successfully the selection, storage and recombination function which we call Learning. All these educable machines exhibit the powers and limitations of an adaptable organism; but all are different in many important respects and these differences are apparent at all levels and stages of their operation. Even within a single artificial species—for example my own *Machina docilis*—individuals with the same technical specification develop idiosyncratic traits, and these are cumulatively amplified by experience. Some of these differences seem trivial—for example, one synthetic animal may store relevant information as an electric charge, another as a chemical reaction, another as a magnetic field—but such variations are not so trivial if one considers these artificial organisms as forming a community. How is a system that operates with magnetic tape to communicate with another that needs punched cards or flashing lights? Obviously one can make a suitable interpreter, but we know that behind every translator lurks a traitor, and that all organisms tend to consider their own system of reception, storage, communication and control the best, if not the only legitimate language.

What I am suggesting is that the variations of brain activity and somatic response we observe in human beings during learning are evidence that, even among those born and raised in the same culture, speaking the same language and facing the same basic problems, there are differences—some at least innate—in their brain language, at least as great as those in their

eye color or their blood groups. We do not attach much importance to these latter traits, though there is evidence that eye color is related to vascular trends, and in our present society, the interchange of tissues by transfusion and grafting is becoming so common that specific immunity reactions are beginning to influence survival. It has been suggested that if radiation sickness were to become an endemic malady, the most important factor in survival might be to have an identical twin whose bone marrow could be used to replace one's own.

But the nervous system is in a different category of biological importance, and slight discrepancies in operational techniques between individuals may be expected to have profound effects on social interaction and joint activities. Although the physiological approach to personality and social interaction is still in its earliest stages, it is already worth discussing the intimate details of the mechanisms that underlie these essential human characters.

The old idea of the nervous system as a compact but deterministic telephone exchange has long since given place to more sophisticated images based on contemporary engineering and communication. These are less obviously misleading, but really only because the mechanisms of computers, radars and self-directed missiles are less familiar to most of us and may even be officially concealed, and we are only equating two unknowns. Analogies are no substitute for observation though they may—and do—suggest what observations are worth making. I have already referred to the study of the spontaneous or intrinsic activity of the brain as evidence that the nervous system is not merely a passive network awaiting stimulation; I should like to introduce two other sources of information which may help to outline the nature of individual cerebral vitality.

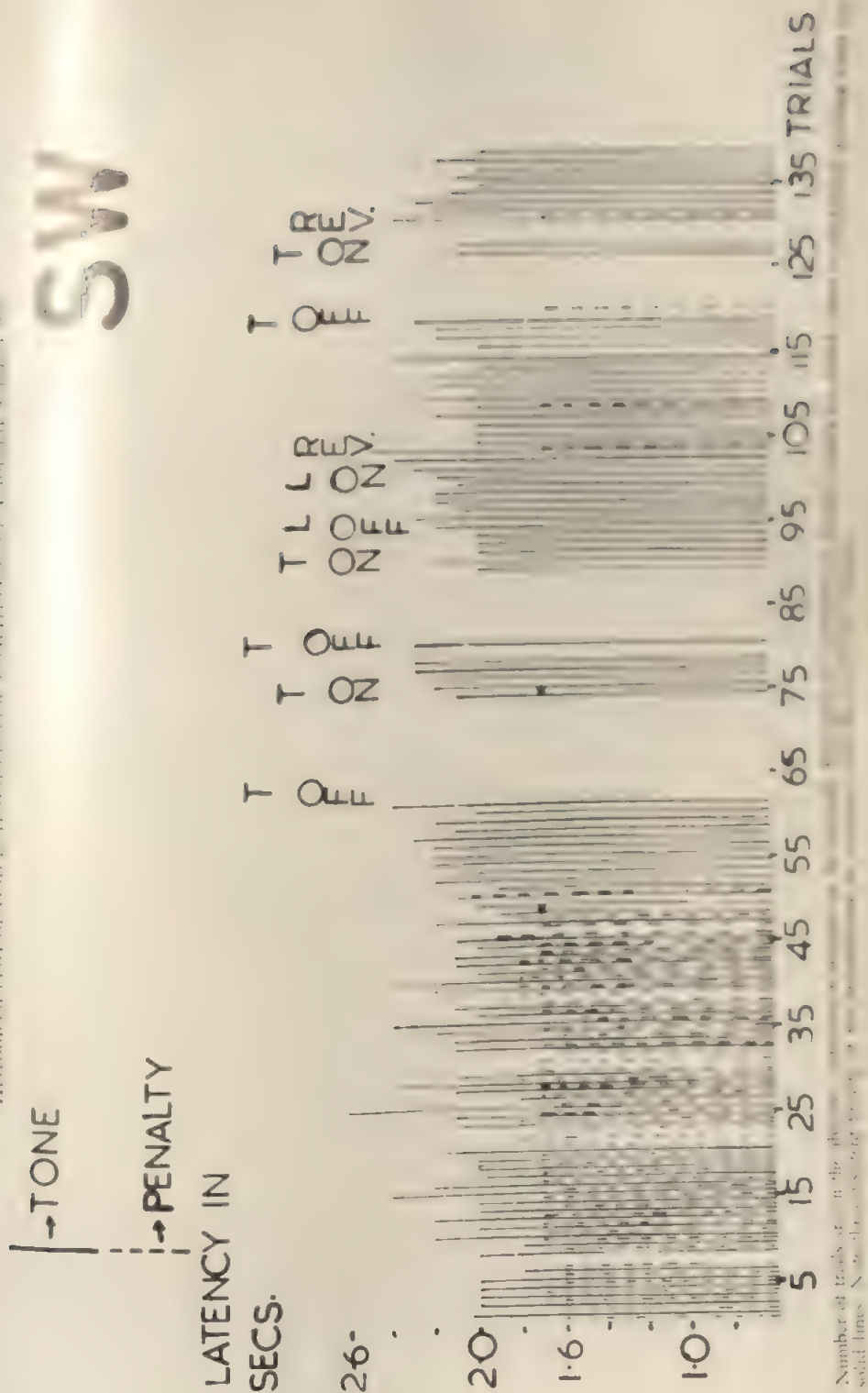
We tend to take very much for granted the rationality of everyday behavior; few realised until recently how much this depends on our immediate and constant contact with the outside world. The experiments initiated in Montreal by Hebb and his colleagues(7) and since repeated with variations in several centers have shown

that even quite sane and intelligent human beings rapidly lose their grip on reality when the volume and variety of sensory signals are artificially reduced. If we were limited to a telephone exchange model of nervous activity we would have to suppose that when no calls were made for a few hours, all the bells started to ring at random. Whatever its nature, the nervous system cannot sustain a condition of passivity for long—there is a positive tendency to exploration and speculation which becomes explosive when unrestrained by the pressure of environmental circumstance.

From another source comes evidence of how this restless exploratory ebullience is controlled and modulated, matched to the necessities of survival and the possibilities of control. Again in our ingenuous physiological youth we assumed simply that any environmental change that was adequate to stimulate a sensory end organ would set up trains of nerve impulses in appropriate frequency-modulated volleys which, emerging finally in the specific receiving zones of the cerebral cortex, would inevitably reproduce in some electrochemical form an image or projection of the initial event. Here, in general, the physiologist lost sight of the process, though he might catch it again in the emergence of some response, if he were dealing with a simple situation in which the response was recognisably related in time or character to the sensory event. And of course for many years physiologists restricted themselves and their preparations—by anaesthesia or mutilation—to just those conditions in which this rare and often artificial simplicity was maintained. More recently however, thanks to the introduction of many new techniques in surgery, engineering and biology, it has become possible to observe the subtle and varied relations between external and internal events in entire animals and even in human beings. One of the most significant discoveries has been that external changes, even though they may be quite adequate as physiological stimuli, do not necessarily evoke responses in the central nervous system. In animals, the central electrical responses to a strong stimulus may be almost totally suppressed when the novelty of the event

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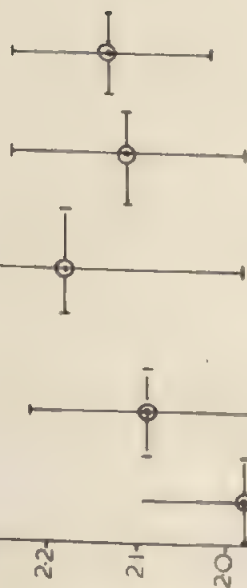
CONDITIONING CURVE AND GSR LATENCY DISTRIBUTIONS IN SUBJECT SW.



SW

MEAN OF 10 LATENCIES \pm SD

LATENCY IN SECS.



ALL TRIALS. N=103

LATENCY OF PGR TO TONE.

FREQ. OF OCCURRENCE

N=43

LATENCY TO TONE IN SECS.

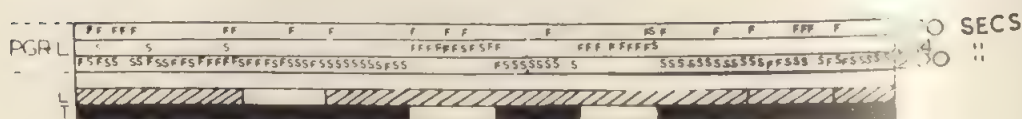
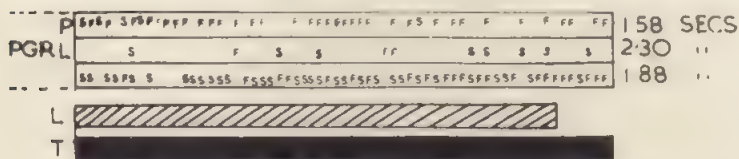
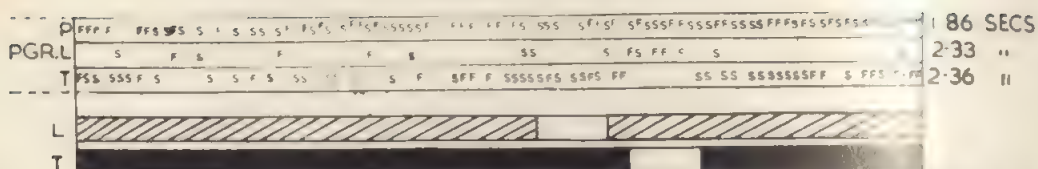
PGR TO ALL PENALTIES

BEFORE LEARNING : --- N=43
AFTER : - - - N=60

TRIALS 8 16 24 32 40 48 56 64 72 80 88 96 104 112 120 128 136

There is no overlap between penalty and conditional latencies, but the effect of the latter is evident in the conditioning curve. The distribution of latencies is shifted towards longer latencies, indicating a decrease in the frequency of occurrence of the latter.

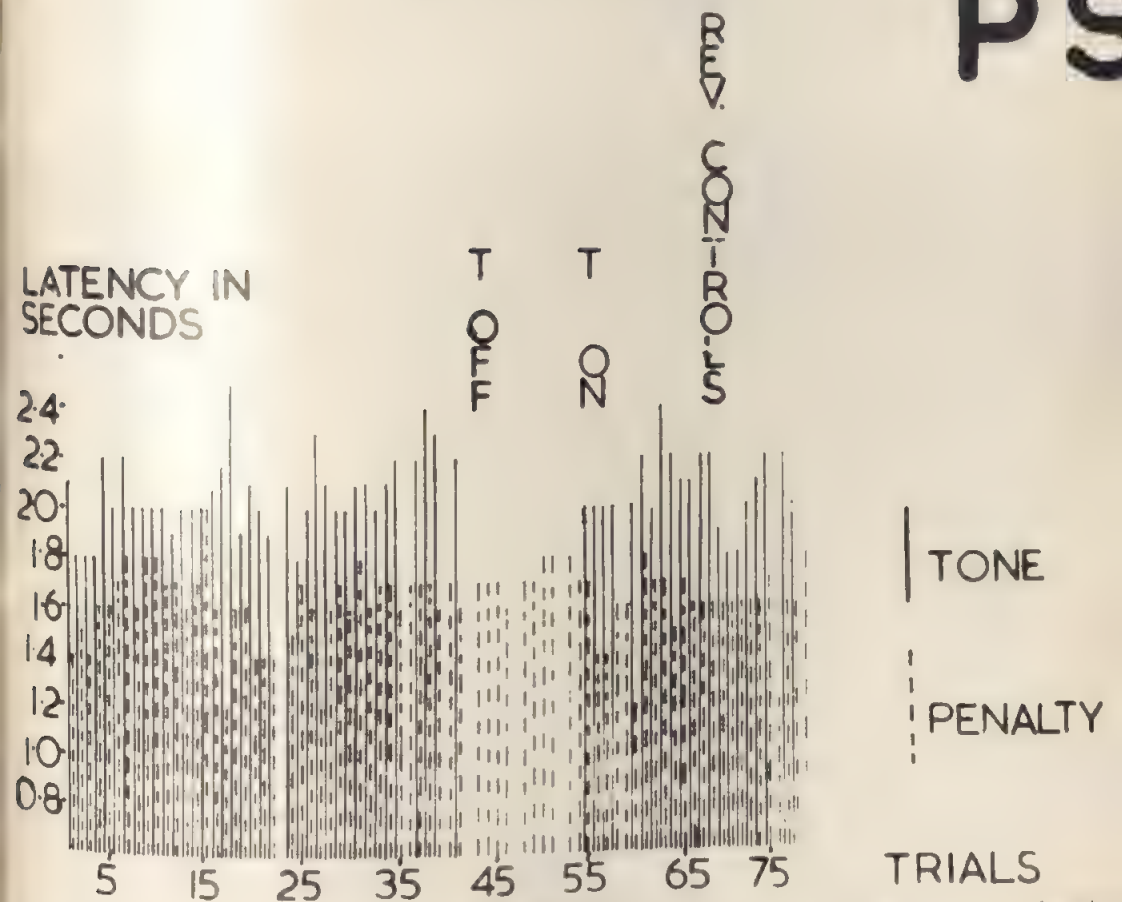
CONDITIONING CURVES FOR SM.



There was no significant adaptation until the third series, after 170 trials

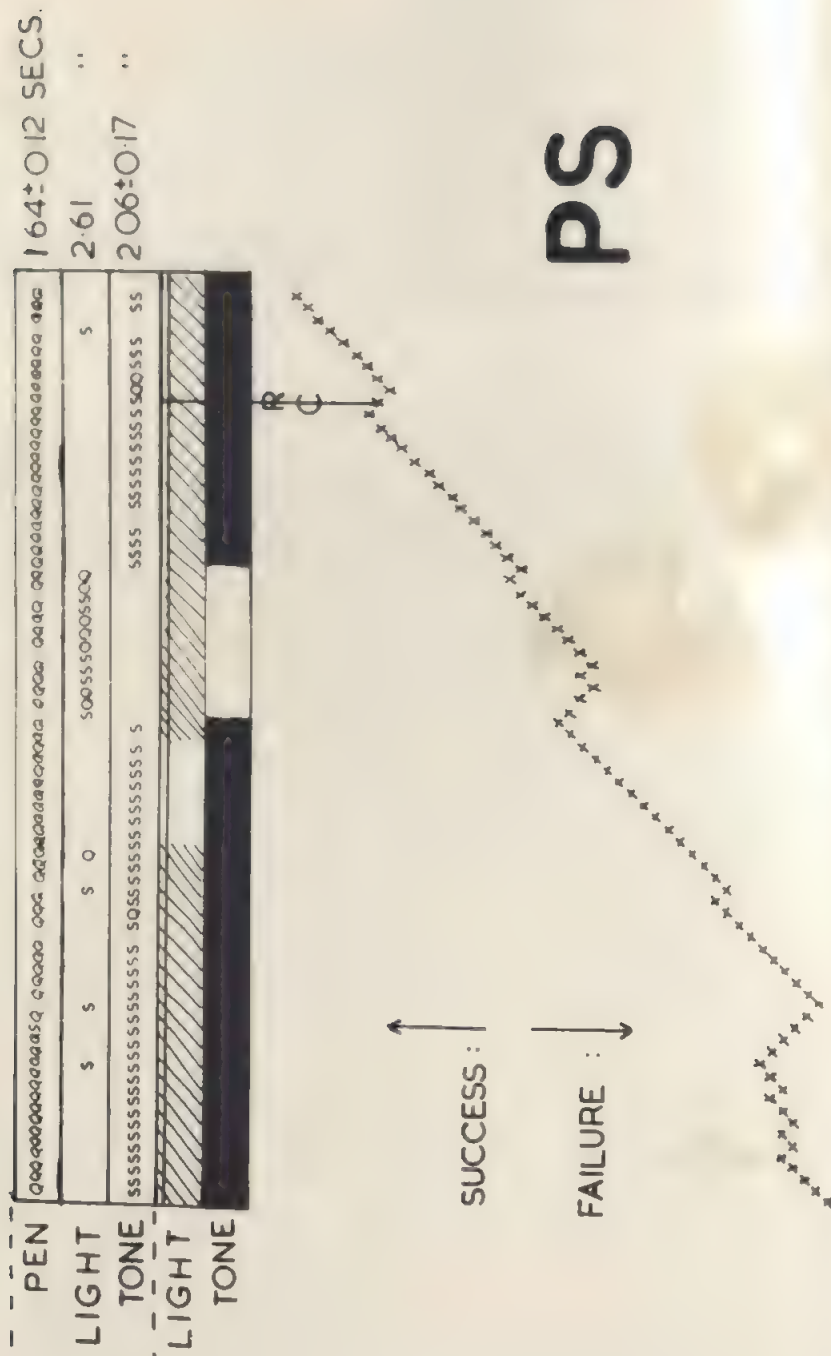
FIGURE 5
GSR LATENCIES OF PATIENT PS.

PS



The distinction between unconditional and conditional latencies is clear, but unconditional responses persist since there were no attempts at avoidance responses

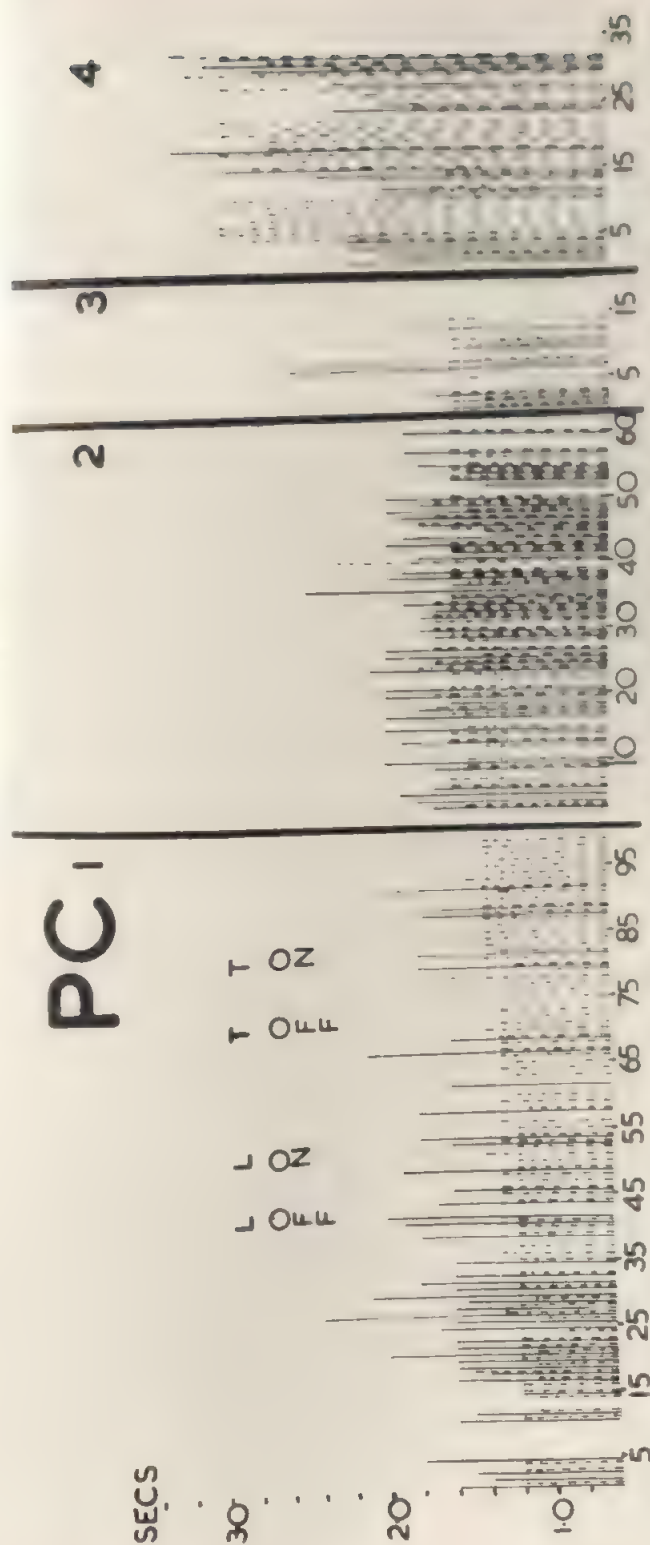
FIGURE 6
CONDITIONING CURVE OF PS.



A sequence of correct defensive movements began at trial 16 but there were no correct defensive movements at trial 80.

FIGURE

GSR LATENCIES OF PATH



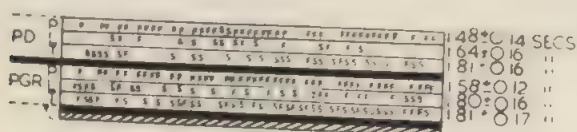
In the first series, before treatment, the latencies are all shorter than in the second series. After treatment, responses persist because the subject never attempted to walk the path. After treatment, responses are rare and variable

FIGURE 8
CONDITIONING CURVES OF PATIENT PC.



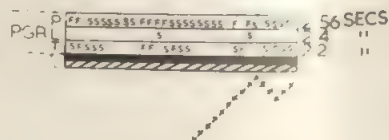
PC.1

TRIALS 8 16 24 32 40 48 56 64 72 80 88 96 104

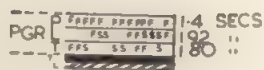


PC.2

TRIALS 8 16 24 32 40 48 56



PC.4



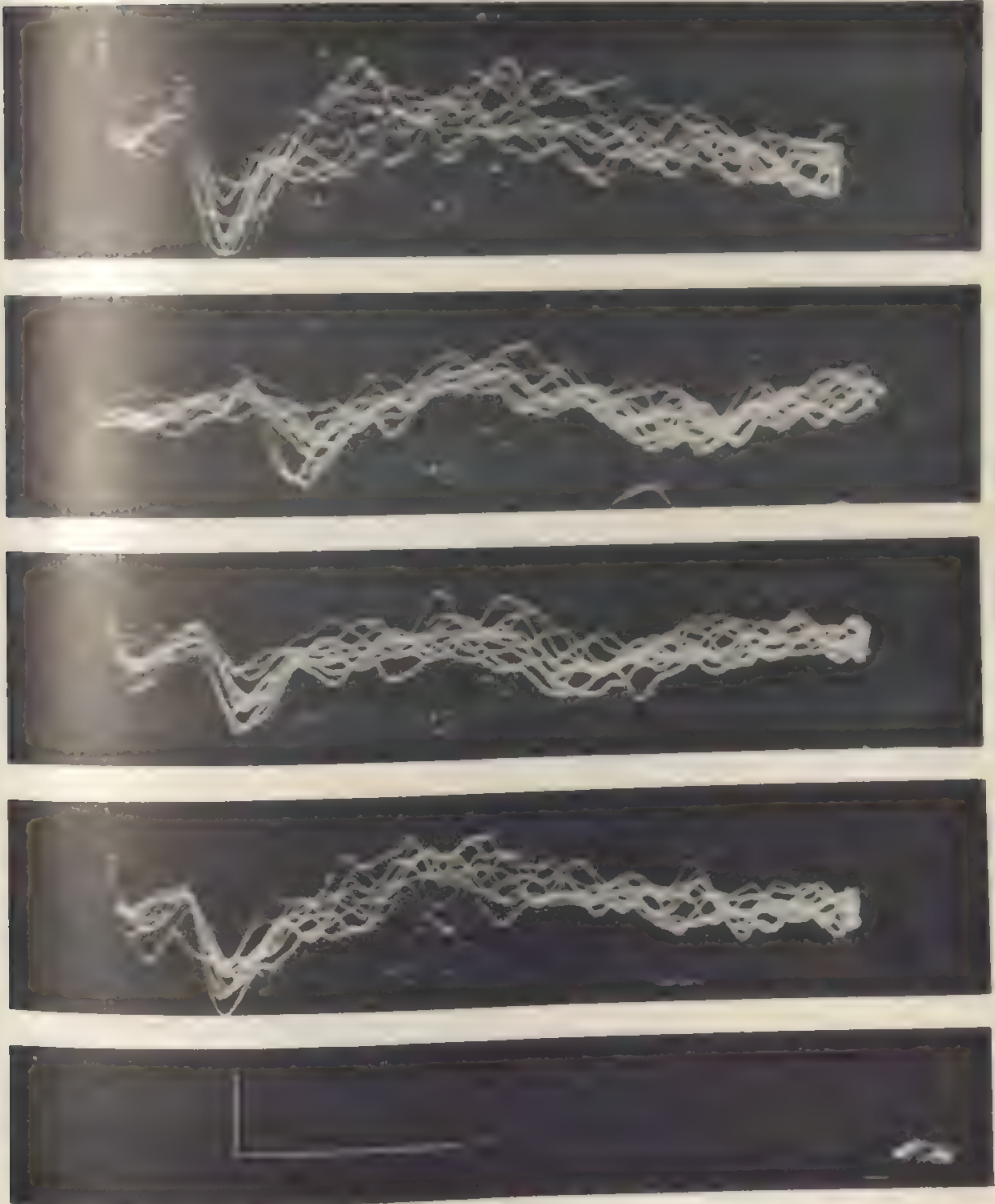
PC.3

TRIALS 8 16 24 32

The upward trend is misleading—the subject kept the lever on one side and reversed it whenever she heard the penalty (indicated by vertical dashes).

FIGURE 9

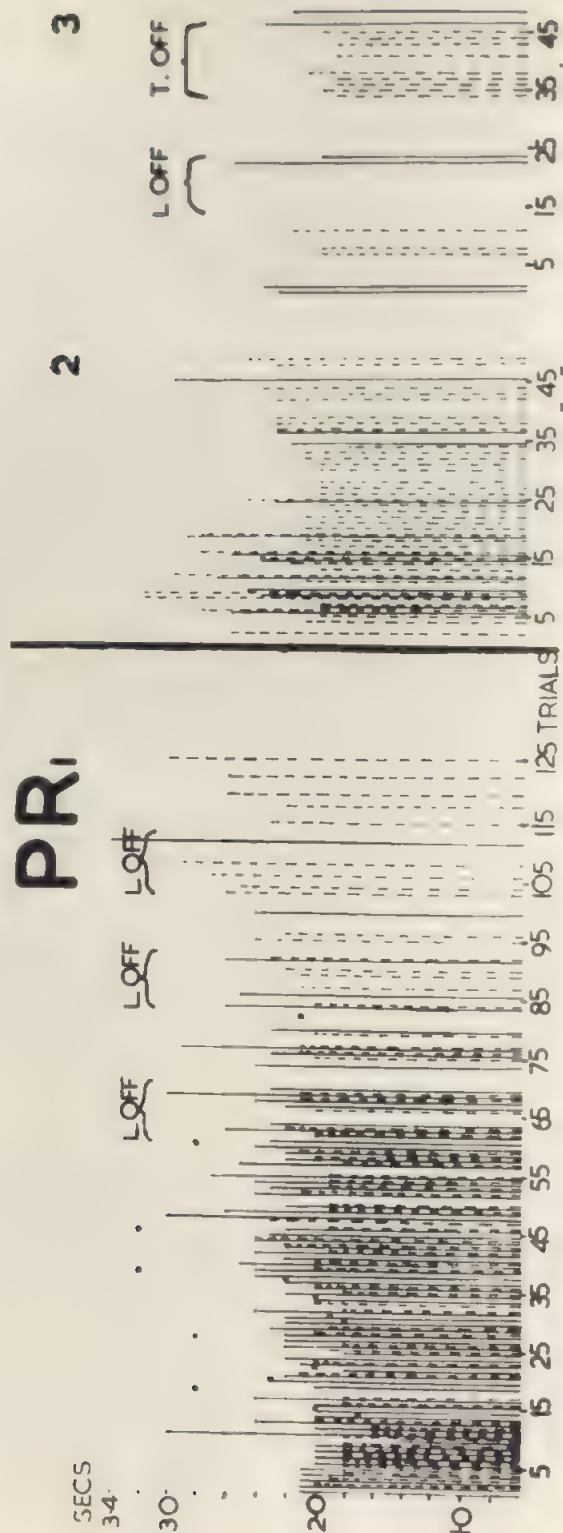
GENERALIZED ELECTRICAL RESPONSES TO VISUAL AND AUDITORY STIMULI WITHIN THE FRONTAL LOBES OF PATIENT PC. SUPERIMPOSITION OF 10 RESPONSES



- A Response to clicks at random intervals at electrode implanted in left lateral frontal cortex.
 - B Responses to flashes at random intervals at the same electrode. Note short latency and constancy of click responses contrasted with longer latency and habituation to visual stimulation. Similar non-specific responsiveness was found in many frontal regions of both hemispheres in this patient.
 - C Effect on responses to combined flash and click of distraction by conversation
 - D Effect on combined responses of directing attention to the stimuli
- Calibration: 100 microvolts, 100 milliseconds

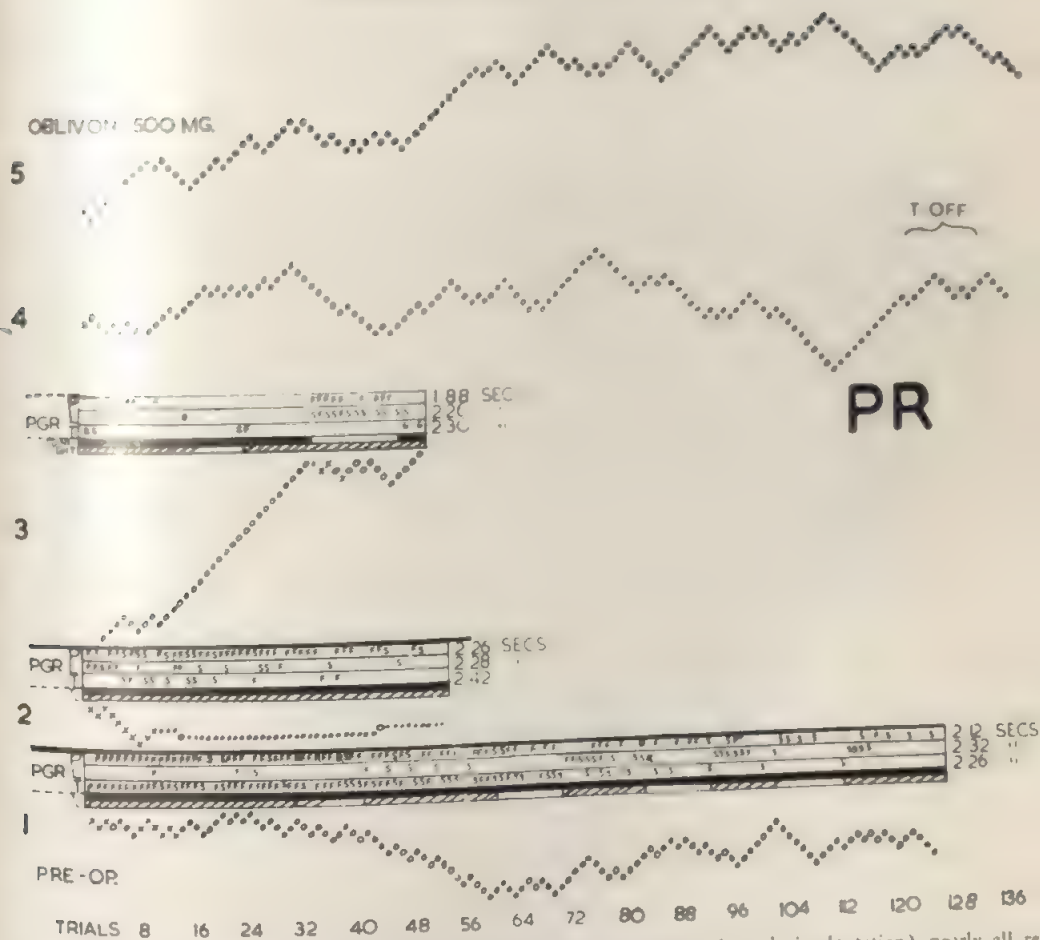
FIGURE 10

CSR LATENCIES OF PATIENT PR.



In contrast with PC all latencies are unusually long and the distinction between unconditional and conditional responses is less clear. At about Trial 65 the conditional responses disappear and at the same time the unconditional latencies increase from about 18 to about 28 seconds.

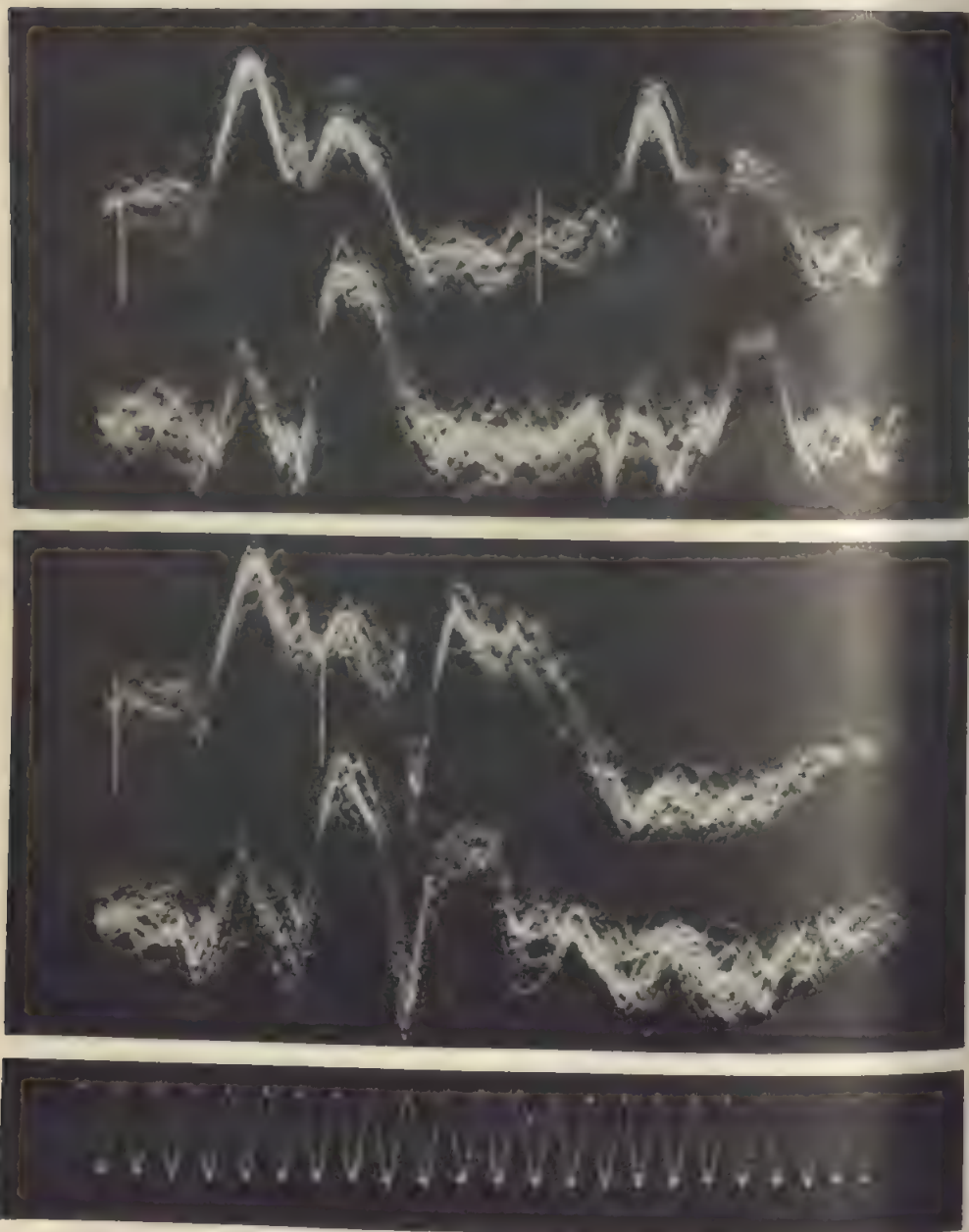
FIGURE 11
CONDITIONING CURVES OF PATIENT PR



There was no sign of adaptation over 175 trials. In the first series (before electrode implantation) nearly all responses were anticipatory but quite random and uncorrected by failure. In series 3 after intracerebral polarisation there was a significant sequence of 23 correct anticipations but this was broken by withdrawal of the tone stimulus. Later series showed no adaptation.

FIGURE 12

SPECIFIC LOCALISED RESPONSES EVOKED BY RANDOM FLASHES IN DEPTHS OF OCULOTEMPORAL
PATIENT PR



These show no habituation but were sensitive to changes in intensity, interval, color, overbreathing and inhalation of CO_2 .

- A. Responses to flashes separated by 230 milliseconds top trace from electrode in optic radiations, lower from electrode one cm. posterior.
- B. Responses to flashes separated by 113 milliseconds. Note the large positive (down-going) pulse that appears with the shorter stimulus interval, and the after-discharge, phase locked to the stimulus

Calibration: 100 microvolts, 50 c/s

wears off with repetition or if the creature is distracted by other events. Contrariwise the response may be augmented when the stimulus acquires significance by association or even minor alteration. This has been shown particularly clearly in animals by Hernandez Peon, Scherrer and Jouvett(8); by Galambos(9) and we have seen these effects ourselves in human beings. The fact of special importance for the subject of this lecture is that this vital control of correspondence between brain and outside world is not an internal re-orientation of domestic intracerebral complexities, but a direct, emphatic blockade reaching out even to the receptor itself—a change in Foreign Policy. Again resorting to the obsolete telephone image, it is not that some calls are unanswered but rather that some callers are denied access to the instrument. There is an obvious and significant paradox here: if a brain imposes a strict censorship on a certain class of signal, how can it maintain the blockade without receiving the signals at all?

A verbal explanation of such effects can never be very satisfactory because of the ambiguities of everyday speech and as I have mentioned, in our experience it is far better to make an inventory of the real phenomena and incorporate these in a working model of the simplest possible design in order to see how difficult the problem really is. In experiments now in progress designed to test model hypotheses of habituation and association we have come across some clues to how and where the vital operations of discrimination and selection are performed within the brain.

It is fairly obvious that since the nervous system can and must classify certain events—in fact the majority of events—as insignificant, redundant or irrelevant, then some part of the system must be able to act as a filter, set to reject signals referring to this category and to recognise and accept signals relating to events in the complementary class of significant or novel. In some conditions the nature of this significance filter seems to be quite simple, almost as though it were a physical template or gauge rejecting all signals except those that satisfy certain canons of size or quality with a reasonable tolerance for

random variations. In other conditions the selectivity is so high and set so narrow that it is impossible to imagine any internal mechanism that could tolerate it. What are the differences in these conditions that seem to reflect at one extreme a rudimentary measurement and at the other a sophisticated taste?

The nearest we can come to an answer at present is that it is a question of sample size. All our experiences are only samples of the whole universe, and we cannot always decide how representative any particular sample may be. None the less an organism, in order to survive, must as it were, assume quickly that certain small samples of experience are quite trustworthy. When a child is born its respiratory apparatus operates on the inspired assumption (if you will forgive the metaphor) that the first lungful of air is a reasonable sample of the atmosphere. The assumption is embodied in the genetic mechanisms that determine the structure of the infant's brain-stem, muscles and so forth. The compound reflex processes we sometimes still call instincts are the expression of basic assumptions of this sort about the world. In general they are essential to immediate survival and show little variation: they operate rapidly and are unconditional. They operate rapidly because only one or few samples are needed and verification is not required. They also tend to involve quite a large proportion of the organism and some of them are only moderately specific—they are evoked by the general or common rather than the special or unusual properties of the stimulus situation. We know only too well that the instinctive behavior of mammals and particularly of primates is hard to isolate and study and we can only envy the relative ease with which ethologists can analyse the Innate Releaser Mechanisms in birds and fish. However, there is one property of instinctive behavior that seems to identify it even in ourselves—its special relation to the autonomic nervous system.

For some generations now we have been accustomed to consider the sympathetic sections of the autonomic system as a vestigial and rather tiresome heritage from our rude and ingenuous forbears. For us,

an answer that admitted to first or third degree burns, this is not a very attractive method as to test only under "mild" conditions. It is true that Marx (1956), the clinicians indeed have asserted that their patients would wish it somewhat, but were as common as tonsillectomy, and it can be argued that in a culture where tolerance and fortitude are admired, the skin-based mechanisms subserving rage and fear are not merely redundant but necessary. Be that as it may we are heavily saddled with this atavistic encumbrance and in our laboratory studies at least we can find a use for it as an indicator of neurohumoral mobilisation.

Only a few of the effects produced by activity of the sympathetic nervous system can be detected and measured on the body surface, and in the experiments I have referred to we are in general limited to the most inconspicuous contacts with our subjects. Of the accessible phenomena, we have paid most attention to changes in pulse rate, blood pressure, respiration and skin resistance; there are also of course more subtle and indirect actions on the central nervous system itself but these are so intricate and variable that I shall only be able to report them briefly later. The simplest and most nearly specific effects are, we find, those due to changes in the sympathetic control of the skin organs, variously referred to as galvanic skin reflexes, psycho-galvanic responses and electrodermal reactions. As we all know, this phenomenon has a long, scientific history, as well as vulgar associations with "lie detection." I need not enlarge on the details of this but for those familiar with the technical details I may say that we have considered particularly the changes in skin resistance, the so-called "Féré" effect as opposed to the potential changes or "Tarchanoff" effect; the relation between the two is still confusing. Our technique is arranged so as to indicate at the same time both the absolute skin resistance and the changes in resistance on suitable scales, and we often record changes from several parts of the body at the same time in order to distinguish between segmental and global responses.

The GSR is—compared with brain activ-

ity—a very simple effect. Typically it consists of a transient fall in resistance of the skin, lasting a few seconds and varying in amplitude according to the state of the subject and nature of the stimulus. The form of the resistance change varies very little but its latency does show significant variations and it is this factor that we have found of particular interest in relation to problems of habituation and learning. Again compared with central nervous effects the latency of the GSR is very long: about 2 seconds is the figure usually quoted. A large part of this latency is due to the very slow propagation rate in the sympathetic nerve fibres: responses in the foot occur about one second later than those in the hand, and the propagation velocity is only between 1 and 1.5 metres per second. As well as having a longer latency, the more distal responses are also more sluggish and prolonged, suggesting that they are evoked by a protracted heterogeneous train of impulses rather than by a synchronous volley.

In our experiments with human conditioning, three types of stimuli are presented: a gentle warning tone of high or low pitch, a flashing light giving triplet or doublet flashes (these are neutral stimuli later to be conditional ones), and a painfully loud penalty sound which the subject can stop or avoid by moving a lever to the left when the low tone and doublet flash are presented, to the right following the high tone and triplet flash. The subjects have to discover this association for themselves—they are given no explicit instructions—but the penalty is disagreeable enough to provide a powerful incentive to succeed, and it evokes large consistent GSRs; it is in effect the specific or unconditional stimulus. The warning tones and lights also usually evoke GSRs, particularly at first, and in the course of a conditioning experiment we therefore record some hundreds of GSR deflections. In our research group it is my wife's task to measure and analyse the records, and in going through the traces of autonomic variables to calculate the average GSR latency, she noticed a peculiar relation between the latency of the GSR deflections and the nature of the stimuli. The GSR following the UCS (the penalty

ness, had a short latency, about 1.7 sec., only in the case of a normal subject (SW) while those following the neutral or conditional stimuli (the tones and lights) had a much longer latency, about 2.1 seconds. When both sorts were averaged, the mean came to about the accepted figure of 2 seconds but in fact there were two distinct populations of GSR—the distribution was bimodal, with almost no overlap between the two categories. The clear distinction between these two types of GSR can be demonstrated very clearly in a histogram when latency is plotted on the ordinate and number of trials on the abscissa—the unconditional responses to penalty are shown as dotted lines and those to the conditional stimuli as solid ones (Fig. 1). In a normal subject all the dotted lines end around 1.7 seconds whereas the solid ones extend from 2.0 to 2.2 seconds. These differences may not seem very impressive (though they are highly significant statistically), but these responses are in the hand which is about a meter away from the central nervous system by way of the cervical sympathetic ganglia and from the observed latencies we should subtract about one second for peripheral propagation time. This leaves 0.7 and 1.2 as the unconditional and conditional latencies; we may say that the sympathetic responses to the conditional stimuli take nearly twice as long to emerge from the brain as do those to the unconditional stimuli. During the conditioning of a normal subject the GSRs to the UCS of course disappear with successful avoidance of the penalty, but the responses to the conditional stimuli remain long in latency though they generally become more variable at about the time that signs of learning appear. (Fig. 2)

As far as we can see the acquisition of the novel relevant response in normal persons takes place in 4 stages; the first corresponds with what Pavlovian workers call Extinction of the Orientation (or Orienting) Reflex. At this stage all the stimuli are fairly novel and equally likely to be significant; all may evoke GSRs, the tone is usually followed by some reduction or even suppression of the alpha rhythms in the brain (if there are any), the pattern flicker evokes its characteristic replica re-

sponse to the visual stream, the light to the auditory stream, and the pulse rate to the somatic stream. At this stage of learning there is a general state of readiness, a readiness to respond to any stimulus, a readiness of the reflex apparatus to give an exhibition of general response. The instrumental response is a crude reaction, an almost unconscious of the subject, from which may result either a correct or incorrect reaction. From here on the development of the response is a thoroughly individual matter, but in most cases, whatever the next stage may be, a series of trials and errors, the subject makes responses to the pattern stimuli, a series of signs of hesitation but the reaction comes to the penalty penalty, there is usually an attempt at avoidance or at least the lever being moved only after the penalty is received as a *let me see how long*. It is easy to illustrate this readily, the number of trials being shown the following: correct responses plotted in an upward, a positive sense and incorrect ones downward. Thus, when the responses are random the learning curve will tend to remain horizontal since there will be an equal number of upward and downward deflections, while a series of correct responses will be seen as a curve rising at 45°. If, however, responses, that is those made after the penalty, are plotted as crosses, avoidance responses are shown as circles.

In the most straightforward normal subject (SW), an intelligent, self-confident young engineer of wide interests, the first responses were quite random and the curve remains horizontal, but at the 38th trial there appeared a series of 10 correct defensive responses, a run of successes extremely unlikely to be due to chance. At this stage of successful defence the pulse rate, which had risen from 75 to 110 at the beginning of the experiment had fallen to 85 and the GSRs to the light (which were rare even at first) had disappeared, suggesting that the subject was being guided by the pitch of the warning tone rather than by the flicker pattern. Accordingly the flicker was omitted at the 48th trial, which evoked a correct defensive response, and at the next trial appeared the first correct anticipatory avoidance response to the tone followed by

5 further avoidance successes. The flicker CS was then re-presented with the tone which still served as a clue to correct defence. After a sequence of 10 more successes, the tone was omitted and the next two responses, though correct, were not anticipatory, but after this, correct defensive anticipation was evoked regularly by the flicker patterns alone. When the tone was re-introduced however, the response was made to this, the first CS, rather than to the light, and when the tone was again withdrawn there was a single failure to anticipate, but from then on only one error was made, accompanied by a deep sigh and theta rhythm in the EEG. Altogether 100 trials were needed to perfect this very simple response adaptation. The completeness and certainty of the response were tested by arbitrary reversal of the control rules; inevitably the response to the first trial under the new rules was wrong, but at the second the subject reversed his own procedure and made no mistakes, though the instrumental response time was almost doubled, from 0.8 to 1.5 seconds for the next few trials. The sudden reversal of rule not only provoked the inevitable unconditional GSR but a pulse acceleration from 75 to 90, a series of gasping respirations, and a slight shortening of the conditional GSR latency to subsequent trials. Further reversals and presentations of tones and flicker alone showed that the subject was now in complete control of the situation and after 139 trials the EEG began to show signs of drowsiness and boredom so the experiment was terminated. In spite of his complete operational success the subject gave a very inaccurate description of the experimental arrangements. His subjective estimate of the time taken for the whole experiment was 1½ hours instead of 2½ hours; he was convinced that the aim of the experiment was to muddle him; he described two types of penalty, both very unpleasant, and was sure that the presentation of high and low tones and "fast" (triple) and "slow" (double) flashes was in some significant sequence such that he should move the lever to the right after a sequence of three low tones. He admitted he began by random responses but said he kept trying to

catch the sequence of signals but lost it later. In fact, of course, the order of presentations was random throughout and he only began to succeed when he "lost" the sequence. This search for significant sequences is quite typical and indeed almost invariable; in these particular circumstances it is of course quite futile and indeed eliminates any chance of success. Some subjects who end by responding quite correctly and quickly are still convinced that they are following a sequence which somehow they cannot quite describe.

Returning to the distinction between unconditional and conditional GSRs by latency we can see in this typical normal subject that never at any time, even after an unexpected and complete failure, were the conditional GSRs as short in latency as the unconditional ones and further, the unconditional responses were just as large and quick at the end of the experiment, when the controls were reversed, as at the beginning. We may infer therefore that, however this subject, as a representative of a normal population, may have interpreted his experiences, his nervous system was capable at all times of discriminating between events requiring rapid and unconditional response and those of more doubtful and conditional import.

We may now consider the behavior of other subjects, in order to see how these observations may illuminate some of the mental aberrations and anomalies of interest to psychiatrists. Before describing strictly clinical applications we may glance at two subjects whose conditional behavior is on the borderline of normality.

The second subject, (SM), is a normal man, a scientist from a country in Europe noted for its war-scarred history and spirited intransigence. For this subject the brief instructions given before the experiment were even less helpful than for most people because of his limited English; he was rather tense and apprehensive, knowing something of the general purpose of the experiment and feeling on trial. A glance at the plot of GSR latencies shows how this state was reflected in autonomic terms. (Fig. 3) There was a wide scatter of the conditional and unconditional latencies and there was some overlap between them.

As the experiment progressed the scatter diminished and the pattern approximated to that of the normal subject. The learning curve, however, has a different story to tell; there was a long monotonous series of failures with no attempt to anticipate or avoid the penalty. (Fig. 4) The experiment lasted so long and the experimenters themselves became so exasperated by the endless succession of penalty squawks (which are repeated to the observation room) that the instructions were repeated and later a recess was called and the procedure resumed after lunch when further exhortation was provided in the form of emphatic repetition of the instructions which imply that the penalty can be avoided. After a total of 132 trials the subjects began to perform anticipatory responses, but without significant success until trial 170, from which point his attainment paralleled that of the first subject, with appreciation of both visual and auditory conditional stimuli and quick adaptation to control reversal. This subject also sought for sequences, and tried to pick up time interval clues by counting his own pulse. Since this varied from 77 to 114 during the various phases of the experiment his estimates were not only useless but grossly inaccurate.

It is striking that, comparing these two normal healthy young men of similar intelligence and alertness, provided with the same information in the same situation, one should take over 4 times as many samples as the other to establish control over a very simple mechanism. If the consequences of failure had been serious—for example if the control lever had been the control column of an aircraft, it is obvious that the first subject would have had a much higher chance of survival than the second whose “nerves,” evidenced by his autonomic lability, were responsible for much of his early failure, leading to later despondency and defeatism, alternating with over confidence and futile ritualistic obsessions. It was not until the autonomic responses had settled into unconditional and conditional categories that distinction could be made between novel neutral and significant stimuli.

How we assign to these effects their correct status as causes and effects, and

whether we consider the behavior of the second subject during his 170 failures as pathological or as a normal deviant, we must discuss later.

Further toward the pathological extreme is a young male patient (PS), considered as an inadequate psychopath, plausible, ingratiating, ineffective, and prone to solving social difficulties by elaborate lies amounting to contabulation. His CSR plot shows at first a close similarity to that of the successful normal subject SW (Fig. 5). There is a clear latency difference between conditional and unconditional responses, with no overlap; the means of the two classes are exactly the same as in the first subject. A glance at this histogram however, shows that something was seriously wrong; the dotted lines representing the penalty responses continue throughout the experiment, while in the first subject there were none after trial 48 when the avoidance rule was learned. This of course means that no avoidance was attempted by the subject and the story is filled in by the learning curve, which shows not one single circle, no attempt to avoid, only accurate and rapid defence from trial 19 (Fig. 6). This subject was able to associate either or both CS and made only two errors when the controls were reversed at trial 69. The subjective report of this subject showed that although he too expected a sequence of stimuli, he finally appreciated the meaning of the CS patterns, but in effect could not be bothered to avoid the penalty by an anticipatory response since he could not be sure that the penalty would occur until he heard it. It is tempting to translate this behavior into terms of pathological ethics—one cannot be sure that an action is wrong until one is punished for it.

We may now survey two patients exhibiting advanced mental pathology to illustrate how the learning and autonomic mechanisms can reflect total failure of control. The first patient, PC, was a woman of 36 with a 12 year history of compulsive thinking associated with fearful delusions with insight. No treatment, either physical or psychological had been effective, and she was referred for implantation of intra-cerebral electrodes and eventual psychosurgery.

Before operation her autonomic responses were extremely brisk and overactive; this is reflected in the histogram of her GSR latencies (Fig. 7). The distinction between unconditional and conditional responses is clear, but all the latencies are very short, about 1.2 and 1.7 seconds instead of 1.7 and 2.1 in the normal subjects. Here again, the unconditional responses persist through 100 trials—there was no attempt at anticipation or avoidance. The learning curve looks quite different from that of PS however: it appears to mount at 45° straightaway but this is misleading and the curve is made up not of crosses (selective defense movements) but of vertical dashes, indicating that instead of centering the lever after each trial, the patient held it hard over on one side and moved it across to the other whenever the penalty occurred (Fig. 8). This tactic ensures that the penalty be received on half the occasions and that the response involve the slowest and largest possible movement. In effect the conditional stimuli were not used at all, although they evoked autonomic and EEG changes. The warnings were assigned no significance and the patient manoeuvred herself into an extreme situation from which she could extricate herself only by extreme action at a primitive level.

The procedure was repeated 5 days after surgical implantation of 68 intracerebral electrodes. Her general condition was unchanged and her behavior in the conditioning situation was similar. After 36 trials she was told positively to center the lever, after which her response curve became quite horizontal indicating a purely fortuitous series of responses. The only detectable change was in the GSR latency which showed a slight but significant increase to both conditional and unconditional stimuli.

During this period very detailed records were being taken of the intra-cerebral electrical activity, using a number of techniques to clarify both intrinsic and evoked activity. An account of these observations would form a lecture in itself, but one set of records is of particular relevance; it was discovered by chance that over wide regions in the depths of the frontal lobes in this patient there were non-specific elec-

trical responses to a variety of sensory stimuli (Fig. 9). These could be evoked by sounds or by visual stimuli and their latency was quite short: 25 m. secs. for auditory clicks and 34 m. secs. for visual flashes. The responses to visual stimuli showed a marked tendency to habituation after 10 to 20 flashes, but the auditory response persisted unchanged over a series of scores of clicks when there was no concurrent stimulation. When a click was accompanied by a flash, the click response was prepotent, but even the combined response was attenuated during distraction by other stimuli and both click and flash responses were augmented when they acquired extra significance as conditional stimuli. The most striking features of these responses were their very wide dispersion, particularly in the lateral frontal regions of both hemispheres, and their characteristic form—a stereotyped pattern very similar to that found in specific projection regions. Yet these effects were in parts of the brain as remote as they could be from any specific receiving zone—generally the most taciturn of the so-called silent areas.

Recalling what we have said about the need for a high and controllable selectivity in the learning brain, we see here evidence for just the opposite, an indiscriminate over-responsiveness, in which everything may mean anything in general and nothing can mean anything in particular. We may presume that the brevity of the autonomic delay and briskness of the responses were also a reflection of the same lack of selectivity and discernment.

As well as being used for recording, the implanted electrodes were used for progressive electrical polarisation within the brain and to achieve a limited and reversible leucotomy. After the first trials of this method, which was followed by a rather dramatic loosening up of the patient's tension and delusional fears, the conditioning procedure was repeated for the third time. On this occasion the patient kept the lever central and made one correct anticipation followed by several correct defensive responses, but she broke down in tears after 14 trials during which there were signs of severe autonomic disturbance. The polarisation treatment was continued in empiri-

cally identified brain regions, this was followed by marked general improvement; the delusions disappeared and the patient became quite cheerful and active. The fourth conditioning experiment reflects this change in two ways; the GSR latencies were greatly increased (those to penalty from 1.26 to 2.56 and to tone from 1.7 to 2.2 secs.) and the learning curve shows an appreciable gain by defensive conditioning over 32 trials. The autonomic changes were minimal. The patient was discharged on probation at this stage, and her subsequent history, though checkered, has confirmed the apparent relation between her mental state, her neurophysiology, and her learning ability.

The second patient PR was studied in similar detail. She is a woman of 60 with a life-long history of migraine overlaid by 30 years of hysterical extension of the syndrome. Her complaint had resisted all therapy, including prolonged psychoanalysis and physical treatment, and her morale had broken during the last 3 years with depression to a suicidal degree, so that she was referred for intra-cerebral exploration with a view to psychosurgery. Before implantation of the electrodes her behavior during conditioning was in striking contrast to the other patient PC though she also failed completely in associative adaptation. The chart of her GSR latencies shows at first a reasonable distinction between unconditional and conditional responses though all the latencies are rather long (Fig. 10). The conditional responses to tones faded out after about 80 trials and at this phase the latency of the unconditional responses to the penalty began to increase and they also diminished in abundance. This effect was so marked that the average latency of the last 10 unconditional responses is significantly greater than that of the first 10 conditional ones; these changes can be seen particularly clearly when the two types of response are plotted separately. The learning curve is unique in our experience: it shows a completely random response, ending slightly below the starting level (Fig. 11). The nature of the response is quite peculiar—from the 13th trial to the 125th all the movements were anticipatory, but were entirely at random, and once the

lever had been moved to one side it was left there whether or not the penalty occurred. In this way the patient ensured that she received the largest possible chance number of penalties for the longest possible time. A scalp EEG taken just before the conditioning experiment had shown a dramatic frontal spike response to flicker, but this disappeared and during the experiment there were elaborate multiple responses to pattern flicker in the posterior brain regions, but no indications whatever of diffuse response (Fig. 12).

The experiment was repeated later on the same day with further exhortation and encouragement and on this occasion after 11 trials, 22 correct anticipatory avoidance responses were made. At this stage the GSR chart showed reduction in average unconditional latency to 1.85 secs. and distinction between this and the conditional latency. Omission of the light CS had no effect but omission of the tone resulted in random responses. This suggests that in spite of the clear specific responses in the visual pathways, the visual information was assigned no associative significance.

During this period the intra-cerebral electrodes in the orbital regions of the frontal cortex showed profuse persistent delta rhythm attributed to local electrode lesions. The mental condition of the patient improved and remained excellent for some weeks, but she regressed in spite of polarisation of selected frontal sites. The conditioning experiment was repeated on two occasions two months later and showed reversion to the original pattern. In a total of nearly 280 trials all were random anticipations, in spite of emphatic repetition of instructions. At this time the frontal delta rhythms had subsided and the EEG responses to stimulation were stereotyped and restricted to the visual regions.

The varied and detailed studies of these 5 human beings have been chosen to illustrate and justify the title of this lecture; in all our mental life what happenings are more vital than the incessant meshing of stored and new experience to drive us on to fresh dangers and discoveries? And what, in the puppet theatre of our laboratory could mimic more closely the tragic breakdown of this mechanism than the to-

tal failure of the two patients to control by the twitch of a muscle a situation which could be mastered in a few attempts by the humblest experimental animal? Where, we must still ask, do these vital things happen and where should we seek the cause and cure of their decay? The complete answer may always elude us—we have no prior knowledge that there is an intelligible answer, or that we can frame a proper question, but in the observations I have outlined, some pattern seems to be emerging.

In normal human beings, uncorrupted by scholastic tyranny, and capable of exploratory control as well as internal regulation, we can identify two main necessary and sufficient conditions for free life. First, the preservation of a brisk and buoyant autonomic system specialised for—but not limited to—the urgent adjustments of the somatic springboard of action. I have deliberately restricted my account of these adjustments to a few of the simplest and most superficial changes. You will realise that these are but the outward expression of a delicate and personal intimacy between the border regions of the primitive and ancient brain structures, the limbic cortex, and the great mass of tissue in the still youthful external crust of brain, whose evolution has occupied only the last few seconds of the eleventh hour of living time. It is these intra-cerebral relations that most concern us, rather than the external changes they promote, for the alterations in body state are in a sense trivial or at least adventitious. We have seen that the mobilisation of the autonomic allies for cogent action takes some time—a long time by the brain clock that ticks in thousandths and chimes in tenths of a second. This pause, we must suppose, in the normal way is for reflection—not of course necessarily for conscious thought in any useful sense, but for selection and identification of novelty and significance. The second of the two necessities I spoke of are the cerebral mechanisms underlying just these basic processes of cogitation and we can see that here again the necessary sites and structures announce themselves. In a quite novel situation, any prior assumption about likely contingencies may be fatal, so all

signals must be dispatched to all departments—"for information only." In physical terms this means that the nerve impulses set up by unfamiliar sensory stimulation must be coded, sorted and relayed to widely dispersed brain regions in a form which will ensure attention but restrain action, while not impeding or interrupting work in progress. The recent and revolutionary studies by Moruzzi, Magoun (1), Jasper and their colleagues have demonstrated how and where these essential, subtle functions can be performed; there are in fact neural mechanisms for the broadcasting of sensory information within the brain—the diffuse, non-specific radiations from the reticular formations in brain-stem and thalamus. In animals the functions of this system have been rather vaguely described as "arousal" and "alerting"; I am suggesting that though they may be non-specific in their projections, these functions are quite specific in their relation to behavior and particularly to learning.

We still lack much essential information and there are surely wonderful discoveries still to be made; it would be wrong to make dogmatic assertions but precise hypotheses we must have if our discoveries are to be of more than academic interest. I suggest that, from such observations as I have described here we can envisage at least three basic functional sub-categories or modes of central nervous action related to mental action, all involved with and depending on the basic neuro-humoral operations of the autonomic system.

First, there are the unconditional responses to specific stimuli which I still consider legitimately as instinct in the literal if not the literary sense. Most of these responses are quite elaborate and may involve nearly all organs, but they require neither discrimination nor internal reflexion though they are reflexive in their mechanism. They must therefore depend upon a diffuse transmission, not to the cortical levels so much as to the hypothalamic and autonomic effector pathways. These responses are brief in latency, stereotyped in pattern and usually reinforced and protracted by hormonal support, particularly from the adrenal glands. The role of these response patterns is of course

mainly homeostatic and their variety is limited—by evolutionary necessity—to match the limited number of predictable environmental changes likely to be encountered by any particular species. This may seem to contradict the suggestion that these aspects of behavior are related to mentality, but we should recall that even the most fundamental and primitive action of all—respiration—is so closely linked with thinking that our Mediterranean ancestors attributed to breathing movement much that we would describe as mental activity; hence we derive all our words containing the syllable—*phrene*—. No one would suppose that schizophrenia was due to a split in the diaphragm but in records of respiration we can trace quite easily clear associations with mental state, and we should be reassured to recall that the respiratory centres are anatomically embedded in that reticular formation to which we must assign so many essential properties.

Next, are the responses to novel and apparently neutral stimuli. In contrast to the unconditional homeostatic processes these are an expression of orientation and invention since they are not programmed in any useful sense and must involve much more elaborate neural mechanisms. They are easily confused with instinctive responses because they have many common effector pathways, particularly in the autonomic outflow. The distinction between the two can be made only by careful observation of the time relations of the central and peripheral effects and the alteration of the responses with the passage of time. The most important distinction is, of course, that the response to novelty must involve widespread cortical diffusion of signals, whereby the degree of innovation can be recognised. This is the process, presumably, that takes time; the central files and records, whatever they may be, must be searched and scanned for similar events and a preliminary entry must be made if no trace is found of the dubious experience, which, for good or ill, must be tentatively classified in some way until further information is available.

The third category is the one to which we have paid most attention: the selective sorting of consecutive or related events so

as to construct within the nervous system a working model of the outer world with enough detail and accuracy to permit coherent and relevant actions of control. We have seen how vulnerable these mechanisms are—they may fail altogether in people who are still capable of a nearly normal existence in protected environments. Since they require a great versatility of cerebral performance, the widest possible repertoire of functional configurations, failure in these processes can occur in any number of ways. As we have seen, they may fail by overemphasis within the brain of broadcast information, the deadening by incessant propaganda of individual character, or by blockade of the normal services, by censorship without discrimination or appeal. They may also of course be grossly perturbed by overaction or degeneration of the mechanisms subserving instinct or innovation—this too we have seen in individual subjects.

For many of us the new intricacies of psychobiology are beyond our mental grasp—none of us I think can yet appreciate in its full grandeur the panorama of mental physiology as revealed in the oblique light of dawning revelation. We may find in social parallels some analogy to the potential freedoms of the cerebral community. In searching for the model of the democratic ideal we need not look as far away as Athens or Westminster—within our heads we carry the free society, for we find no boss within the brain, no oligarchic ganglion or glandular Big Brother. In this small space our very lives depend on equality of opportunity, on specialisation with versatility, on free communication and just restraint. It is here that vital things have their beginnings and their developments and it is here too that our proper studies should begin.

Recalling again Meyer's expostulation "I wish it were possible to get rid of the words"—we may well feel our intellect is being swamped and suffocated in glutinous phraseology—these Greco-Latin hybrids such as "psycho-physiology" may be the sterile offspring of a marriage of technical convenience. But I hope that in these glimpses of our newborn offspring we may

recognise the natural and fertile issue of a union of passionate necessity.

One of the most satisfying aspects of this sort of investigation is the need for real team-work, depending on complementarity of training and aptitude, collective responsibility for the general strategy, and delegation of operational authority. In the experiments described here, Dr. H. J. Crow is responsible for all clinical applications and interpretations, Dr. R. Cooper for solution of the physical and technical problems, my wife, Mrs. Vivian Walter and Mr. Arthur Winter for management of the experiments and Mr. W. J. Warren for the construction and maintenance of the equipment. In addition, it is a pleasure to acknowledge the close co-operation of our surgical colleagues, Mr. George Alexander, F.R.C.S., and Mr. Douglas Phillips, F.R.C.S. An essential member of any such team is what is sometimes called a non-playing captain, who can see the whole situation with detachment and perspective; in this capacity Professor Golla has for many years inspired and directed these investigations.

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DISCUSSION

Lawrence S. Kubie, M.D. (New York, N. Y.)—Rarely have I had a more challenging, fascinating and difficult assignment. Two streams converge in this lecture. The headwaters of one derive from Adolf Meyer, who foresaw that the subtle complexities of human psychology would be explained in neurophysiological terms only when these became more subtle and complex than what Meyer used to refer to scornfully as the "neurologizing tautologies" of his day. He foresaw that "Where vital things happen" could be explained only by a neurophysiology with a new subtlety and a new vitality. This is precisely what we have had the privilege of hearing this morning.

It fascinated me to discover how adroitly W. Grey Walter has walked the tightrope between vitalism and the ultimate in mechanistic philosophy. Indeed it brought to mind a scene from earlier years at the Hopkins. The ancient, medical amphitheatre was filled with students who had come to hear the famous and by that time aging biologist, Driesch. Introducing him was "Popsy" Welsh, no longer young himself, portly with his halo of white hair slipping down below his occiput to ring his bald pate, but with all feet firmly planted in the good earth of science. I can hear him growling a bit as he said, "Of course there is a tendency on the part of many to feel that when a scientist becomes a philosopher he must be verging on that inevitable fate which we call the senilium." Then with a quick look at the guest of the occasion he added hastily, "But of course we don't have any such feeling about our honored and famous guest." So I look at my friend; but no matter how carefully I scrutinize him I cannot find a trace of the senilium here: so I can say with Popsy Welsh that no such idea crossed my mind for a moment, as I contemplate our honored guest. And the fact stands that in his lecture he skirts the precipice of mysticism without once letting his foot slip; and I for one found it delightful to watch him do it.

There are more serious matters to be considered however: and many penetrating and imagination-stirring phrases.

I would call your attention to the distinc-

tion he draws between the classical method of science, which *depends upon the isolation of a single variable in large scale simple systems*, and the contrasting logic of contemporary physics, where the method of science has become the *"application of highly refined and abstract notions of probabilistic interactions between unidentifiable elements in complex micro-systems."* This throws a light on the essential challenge with which the effort to integrate neurophysiology and psychology confronts us; because in psychobiology, as he points out, we have large scale and complex systems, which are made up of heterogeneous and not homogeneous elements; and unlike the cells of the bloodstream they do not interact in parallel but freely, and with an almost infinite variety of interconnecting patterns. If one considers the *10,000 million neurones* in our nervous system, and the number of patterns in which their connections can be arranged, the possibilities become not only immeasurable but almost inconceivable, even by that superlatively equipped apparatus, the brain itself.

Then he points clearly to the basic scientific significance of psychoanalysis, seeing with extraordinary perspicacity that the essence of its technique derives from the laboratory rather than the clinic, and that its observational situation is so designed as to ensure that *information will flow predominantly from the complex system which is under scrutiny to the observer* and not in both directions simultaneously as happens in all other human interactions. It is highly significant that without sacrificing one legitimate skeptical doubt our gifted lecturer can characterize so clearly the essential position in science of psychoanalytic methodology. I might add that even among analysts there are not many who do so, and that he is one of the few among experimental physiologists who has this understanding.

Glider planes happen to be our lecturer's preferred method of personal transportation; and he uses them much as the cat in the fable used his seven-league boots. Thus his next great glide is to explain why models are the best means to close the body-mind gap. With words which are poetic

in their economy and clarity, he points out the advantages of the model: that it is always and frankly an analogy, that it either stands or it breaks down, but that when it breaks it breaks clean. *"They shear with a clean snap and do not yield and flow as words and phrases do."* Never have I heard the ultimate difficulty of all psychologizing more pungently expressed. All psychologies depend uniquely upon words. Yet words are as treacherous as quicksand. They *"yield and flow"* when we put our weight on them, molded by our prejudices and partisan feelings. And we are worse than Tweedle-Dum and Tweedle-Dee in Alice. We make them mean whatever we want them to mean, without even paying them extra. And this we cannot do with the model. Thus without laboring the point, he makes clear the basic technical philosophy that underlies the use of models in the effort to bridge the gap between physiology and psychology.

But then, unhappily and inevitably moments come when he too has to use words, and he illustrates the very treachery of words which he deplures. Thus when he describes what models have been able to do, he speaks of *"goal-seeking behavior," "self-regulation and self-repair," "appreciation of optima," "logical decision," "free choice between equally probable objectives";* the *"identification of self,"* the *"development of personality,"* the *"formation of cooperative communities,"* the *"modification of behavior by experience."* Here I have to ask whether his words are not now flowing and yielding under his weight, whether these are actually identities or mere analogies, or at most a *spectrum of complexity*; and whether the spectrum exists with continuity or discontinuity still remains to be demonstrated. Surely it is not entirely an accident that it is precisely at this difficult point that the issue of *vitalism* rears its tempting and uneasy head.

I must ask some more questions. It is true, of course that he can make a machine, his *"Machina docilis,"* that can learn certain things. It can select relevant information from random input, called *"noise."* It can store and classify this information and it can re-combine it into new combina-

tions. And the machine shows some individual idiosyncrasies.

But equally important are the things it *cannot* do. Is there any individual machine which can develop an obsessional work block, potentially capable of doing great things but capable none the less of dawdling? Can he make a machine that would fantasy action instead of action? Can he conversely make a machine with a repetitive and insatiable (*i.e.* compulsive) learning drive or a need incessantly to *do* instead of to fantasy?

Or let us take another step. Can he make a machine which would experience and even communicate something similar to elation if it succeeds, or to depression if it fails? Even more important can he make a machine which will react to failure with elation and with depression to success? Has he a machine which will play truant from school, substituting other forms of misbehavior like a juvenile delinquent or for that matter like a senile delinquent.

These are some of the limitations of the machine models; and they should be borne in mind even as we are impressed by their extraordinary versatility.

Then he swoops again, this time to the question of how to classify the subtle qualities and functions of which this extraordinary and almost infinitely complex machine is capable. Here his basic verbal tools are the concepts *versatility*, *imagery*, *stability*, *ductility*, out of which he must derive learning and memory and motivation and imagination and originality and *personality*. I must challenge him here again; because suddenly we meet another word which gives me pause. I have never been sure that there is such a thing as *personality*—not at least as a *Ding-an-Sich*. Is personality a quality, a function, an attribute which is in a person? Or is it an intuitive, highly colored (or *discolored*) impression *which exists only in the eye and mind of the beholder*, a different one in the mind of each beholder? A nice question this, when we stop to think of the reams of paper and ink and experimental work which have been devoted to efforts to define and measure something which may not even exist as such. Consider only the number of Ph.D. theses which have been written on

this elusive topic! Perhaps it has eluded our search precisely because it is an abstraction which has no more claim than a Unicorn to existence as a definable unit. William James pointed out many years ago that *Consciousness* is an abstraction and that it has no existence except as an abstraction from moments of a man being aware simultaneously of himself and also of himself being aware of something. The same may be true of personality.

Then comes another great leap, which carries our lecturer to one of the most important developments in the correlation between behavior and electrical studies of the activities of the brain, namely the establishing of a high correlation between the capacity of an individual for versatile behavior and high variants in brain rhythms. This leads him to consider the significance of this in relation to the amount of variety which is needed to recognize variety (Ashby), to communications theory, and then to a consideration of the fact that adaptive behavior is built out of conditioned reflexes superimposed upon unconditioned reflexes, *a process which is governed by statistical laws*. In this process he recognizes three essential stages: (a) the selection of relevance out of random input on "noise," (b) storage and classification of input bits, (c) the re-combination of stored data to form fresh psychological events. In essence this is the method by which the *central core of preconscious processing* is built into the psychophysiology of behavior. As we begin to grasp the full implications of this preconscious conditioning, we face a new understanding of the variety and detail of human experience. What Grey Walter outlines here provides a basis for understanding of (a) preconscious filtering of data, and (b) for preconscious conditioning built out of and around the unconditioned reflexes which arise directly out of the body's essential homeostatic and homeothermic biochemical and biophysical requirements.

The speaker then makes a passing reference to the data dependent upon afferent isolation. Here again he slips into verbal error, by using the currently accepted but fallacious term "sensory deprivation." The phenomena are afferent but not sensory:

and are dependent *not* upon deprivation (a word which begs the whole question of its mechanism) but upon *relative* isolation. No method has been devised by which the continuous inflow of preconscious interoceptive afferents has been eliminated. The exteroceptive inflow can be eliminated and proprioceptive afferents reduced; but that is all. Secondly, we should not overlook the significance of sharply localized afferent reductions, as first emphasized by Cushing in World War I. Quite unwittingly Cushing showed that the tragedies of war gave experimental verification to Freud's basic observation on the role of sacral functions in behavior. Cushing observed that if a man is cut off from all afferents from the lumbosacral segments by a transection of the cord above the lumbosacral level, he becomes a philosopher and a model of resignation. This is a form of selective afferent isolation the significance of which must be kept in mind in the interpretation of all current experiments in this area.

The speaker next leads us to consider the role of the autonomic nervous system; and here he brings to us a direct report of his own experimental work with the galvanic skin reflexes (more particularly, alterations of skin resistance). He focuses on the duration of the latency period of conditioned as opposed to unconditioned galvanic skin reflexes, and shows that the latency periods for the unconditioned responses are always briefer than the latency period for conditioned responses. With this as a base, he describes a series of experiments on the spontaneous, unguided learning process (*i.e.*, learning specifically how to avoid an unpleasant stimulus). He shows how the learning curve varies from one individual to another, and how this variation correlates with a shift from unconditioned responses with brief latency periods to longer latency periods for the conditioned responses, until finally the avoidance response is so completely learned that the galvanic skin reflex itself is no longer evoked. Here again one sees clearly the role of preconscious functions in the wholly preconscious acquisition of autonomic responses.

Here we must consider further the data

from experiments on human cerebral vitality. Of special relevance is the selective correspondence of intra-cerebral events with the patterns of external events, a correspondence which requires some process of selective filtering at a primary intake point, a "significance filter" or "relevance filter," as Grey Walter calls it. This implies a matching of signals from incoming "*gestalts*" to some pre-set pattern. This too is linked directly to instinctual behavior through the galvanic skin reflex. And here the emphasis on the skin is of even greater importance than Dr. Grey Walter takes time to point out. The skin is the boundary between each of us and the outside world, between the "I" and the "non-I" world. Moreover, distance receptors are mere extensions from the skin,—like the relation of wire-tapping to the unaided human ear. It is this which gives peculiar significance to his studies of variations in the latency of the galvanic skin reflexes of conditioned and unconditioned stimuli in the learning process.

It may however, be useful to emphasize the fact that all such conditioning, both autonomic and psycho-motor, the resultant intra-cerebral mechanisms for coding and sorting, the widely dispersed relays which insure attention, all of these operate not in the conscious symbolic system nor in the system of distorted or "unconscious" symbolic processing (in the psychoanalytic sense) but on the preconscious level. This gives to preconscious processing a dominant significance in human mental life.

Ultimately, if the machine model is to become a more adequate diagram of human mental equipment, it must provide us with a facsimile of 3 basic modes of mental functioning:

(a) The vast majority of its action must take place on a level which is equivalent to preconscious processing. It is mainly on this level that *unconditional* responses occur to specific stimuli, with diffuse transmission to hypo-thalamic autonomic pathways for homeostatic and homeothermic controls; and it is in the same preconscious system that conditioned responses with longer latencies lead to less stereotyped patterns. For it is on this level that we estab-

lish conditioned reflexes to novel or neutral stimuli which have been linked to the unconditioned stimulus. Therefore, it is this which provides the initial diffuse searching and the gradual orientation which leads to adaptation. It is this multiple in-flow and outflow, including the autonomic, which constitutes the raw material of the learning process.

Finally, it is on this level that input patterns are matched with pre-learned configurations.

All of this occurs through preconscious processing, based on unconditioned and conditional reflexes. This then is the core of what the machine model must in some measure set out to duplicate.

(b) The next step however, is even more difficult. Superimposed on the preconscious process is a symbolic system which samples the preconscious stream. This must also include self-sampling, if it is to be a true analogy to human symbolic behavior. Moreover the sampling process feeds bits of information data back into the preconscious stream through fresh conditioned reflexes. This also must be matched by the machine model.

(c) Finally, the machine model must reproduce in some measure that distortion of the sampling and self-sampling system, which in human affairs we call "unconscious." To reproduce all three of these ingredients would be the ultimate goal of the machine model.

INFORMATION INPUT OVERLOAD AND PSYCHOPATHOLOGY¹

JAMES G. MILLER, M.D., Ph.D.^{2,3}

It is a commonplace that variations in rates of input of energy or matter to the nervous system can result in pathological behavior, even complete breakdown in function and death. This is true both of lacks of energy or matter input, such as cerebral hypoglycemia and generalized starvation, and also excesses of energy or matter input, such as heat stroke and magnesium poisoning. So there can be energy or matter input underloads and overloads to the brain.

In the last decade increasing attention has been devoted by physical, biological, and social scientists to the effects of alterations of rates of information input into systems, independent of changes in energy or matter flows. We use "information" in the currently accepted technical sense and are concerned not with the value of the information, but rather with the quantity of it. When measuring amounts of information, our units, according to current convention, will be binary digits or bits. The present view of information theory is that signals are complexes of data transmitted from one physical system to another, conveying information only if they could not be predicted from data previously available to the receiving system. As Jackson says(5):

Incomplete knowledge of the future, and also of the past of the transmitter from which the future might be constructed, is at the very basis of the concept of information. On the other hand, complete ignorance also precludes

communication, a common language is required, that is to say an agreement between the transmitter and the receiver regarding the elements used in the communication process. . . . The information of a message can be defined as the "minimum number of binary decisions which enable the receiver to reconstruct the message, on the basis of the data already available to him." These data comprise both the convention regarding the symbols and the language used, and the knowledge available at the moment when the message started.

INFORMATION INPUT UNDERLOAD

In the last few years there have been a number of experimental studies suggesting that pathological function of the nervous system and abnormal behavior can result from information input underload, often referred to as "sensory deprivation." Spitz (14) and Fischer(1) have held that the stimulation from the interaction between an infant with its mother, particularly in the third to sixth months of infancy, is necessary for normal mental development. Studying single children and small groups in institutions, they have contended that the effects of "hospitalism" in situations where maternal stimulation is lacking may lead to severe mental retardation. As yet, this question has not been studied with appropriate controls. Several rigorous experiments with animals on related issues, however, have been carried out. For instance Riesen(13) found that if he raised a chimpanzee in complete darkness for the first 3 months of life and then brought it into light, it would never be able afterward to see perfectly. Apparently some sort of information input or sensory stimulation was necessary during the first 3 months for the visual nervous system to develop properly. On the other hand, a chimpanzee raised in light for the first 3 months and then kept in darkness for as much as 6 months, when returned to light, had temporary difficulty seeing, which quickly cleared up. The first few months appeared to be the critical period of need for visual inputs. Thompson and Heron(15) found

¹ Read at the 115th annual meeting of the American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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that puppies reared with restricted sensory and perceptual experiences showed more active exploratory behavior than normal in later life. This fits in with the fact (cf. 12) that the genitalia of infant rats must be licked by their mothers or be stroked lightly by a human caretaker with a pledget of cotton to elicit urination or defecation. This is not a mechanical effect of the mother's tongue or the cotton, but is mediated through sense receptors on the rat's skin. Also Meier and Stuart(9) have shown in a controlled study that handling and fondling kittens will speed up the normal maturational fur color change.

A good deal of attention has been given to the sensory deprivation work of Heron, Doane, and Scott(4) in Hebb's laboratories, of Lilly(8), and of others. These investigators have reported that diminishing the normal rate of sensory input to human subjects, either in closed booths or submerged under water with eyes and ears covered and a breathing tube to the surface, in a few hours produces delusions, illusions, hallucinations, and other abnormal psychotic phenomena in some ways like psychotic states.

From all these human and animal investigations it appears that the organism must receive a certain rate of flow of sensory information for normal development, particularly in infancy, and also for the maintenance of adjustment throughout life. If information input underload occurs, pathological behavior and perhaps permanent structural change result.

ANECDOTES ON INFORMATION OVERLOAD

In our present research we are asking whether the reverse condition, information input overload, can also produce psychopathology. This seems reasonable, since both energy underload and energy overload can disturb organisms. We have not discovered any publications giving clear-cut indication of this. There are, of course, suggestive anecdotes. It is not only in novels and motion pictures that corporation executives, under prolonged daily pressure to make many rapid-fire decisions, break down. The speedy aging of America's presidents, largely from the rush of their life and the continual weight of decisions, has

been noted. The pressure on generals in wartime often has comparable effects.

Perhaps the many blatant and competing sources of information—radio, television, movies, magazines, and newspapers—contribute to the increased tension said to characterize our age. In the moving pictures a person breaking down emotionally is depicted as seeing whirling bright lights coming toward him, loud noises, and other information overloads, as if this were the subjective experience of patients in this plight. But this is anecdote, not controlled experimentation. Is it possible to determine rigorously the effects of information input overload?

GENERALIZATIONS ABOUT FIVE LEVELS OF SYSTEMS

The preliminary studies which we shall report here are directed to this question. They are conducted in the conceptual framework of the general behavior systems theory being developed by our research group(10). We are concerned with individuals, but also we wish to discover whether there are measurable similarities in the functions of various levels of behaving systems. We are equally interested in systematic differences across these levels. So we have undertaken to investigate the effects of information input overloads on 5 levels of behaving systems: The cell (the neurone), which is a subsystem of the organ (the brain), which is a subsystem of the individual, who is a subsystem of the small face-to-face group, which is a subsystem of the larger social institution. Our research, therefore, comprises 5 separate, concurrent studies with similar research designs, at the levels of cell, organ, individual, group, and social institution.

Three aspects of behaving systems can be studied in relation to information input overload. The first is their *performance* when viewed as channels transmitting information; that is, the relation between the input of information into the system and its output. The second is the *mechanisms of defense or adjustment* of the system to the stress of information input overload. And the third is the *costs*.

Concerning performance, we have concluded from a literature survey that if in-

put in bits per second is plotted on the abscissa against output in the same units on the ordinate, output will rise as a linear function of input up to a certain point, leveling out at a channel capacity which cannot be exceeded, remaining at that level for a period. It will probably then decrease swiftly, the amount of information being put out actually decreasing in a "confusional state" as the input rate continues to increase. This represents a final collapse of this function of the system.

In our literature search we tried to discover all the mechanisms of adjustment used by systems to handle information overloads. We identified a number, each of which in some way helps with the problem, but each of which also has a cost in some sort of decreased efficiency of information transmission. Not all systems have all these mechanisms of adjustment available to them. In general it seems that the larger and more complex systems have more of them, which is understandable because they have more specialized subsystems, whose functions are to provide such mechanisms. Those which we have identified are: (a) omission—temporary nonprocessing of information; (b) error—processing incorrect information, which may enable the system to return to normal processing afterwards; (c) queuing—delaying the response during a period of high overlap of input information in the expectation that it may be possible to catch up during a lull; (d) filtering—neglecting to process certain categories of information while processing others; (e) cutting categories of discrimination—responding in a general way to the input, but with less precision than would be done at lower rates, *i.e.*, instead of reporting "I see yellow," saying "I see a light color" or "I see a color"; (f) employing multiple channels—processing information through two or more parallel channels at the same time; decentralization is a special case of this; and (g) escape from the task.

These mechanisms of adjustment do not sound like the classic mechanisms of defense of Anna Freud, but they may overlap somewhat. For example, the mechanism of isolation may be like omission and flight

from reality may be like escape from the task.

Costs of information transmission may be quantified variously. One may measure the amount of energy required by the system to transmit an average bit of information; the amount of some other scarcity required to transmit an average bit; the amount stressful overload shortens the duration of survival of the system or organism; and even perhaps the effects in altering the probability of risks taken by the system in making decisions critical to its continuing existence.

In general we conclude from our literature studies that the cost per bit of information flow at very high rates is probably much greater than at low rates, rising precipitously at the confusion period as the system begins to break down. However, the empirical measurement in comparable units of costs of information flow across the various levels of systems is difficult and we have not yet undertaken such studies. We mention them simply as possible future researches and shall now turn to the details of measurements of performance and mechanisms of defense at the various levels of systems.

DATA ON THE CELL

It is possible to overload a cell specialized for the transmission of information—a neurone—by increasing the rate of input of electrical impulses to it until finally its transmission breaks down. This is not an energy overload, and is rapidly reversible. A review of relevant articles indicates that there is as yet no agreement as to how neurones code information, whether amplitude modulation, frequency modulation, pulse duration modulation, or some other method is employed. We therefore cannot make a direct translation from neural impulses per second to bits per second. However, if we were to make the not-too-unreasonable first-order assumption that there is a correlation of some sort between the number of impulses and the number of bits per second, input-output performance curves of neurones in units of impulses per second may be assumed to have a similar shape to curves calculated in bits per second. In many neurophysiological studies

the rates of stimulation of cells were altered and the outputs measured electronically. For example, Granit and Phillips (3) reported concerning the responses of a Purkinje cell of the cerebellum that its output rate followed the input rate up to about 180 impulses per second, but when stimulated at a faster rate (250 impulses per second), its output fell to 30 a second.

THE ORGAN SYSTEM

Input-output performance characteristics of total organ systems have also been studied, the units in such researches also being impulses rather than bits per second. Function of the complete visual tract, an entire organ system, was investigated, for instance, by Jung and Baumgartner (6). They made microelectrode recordings from the optical cortex in cats being stimulated by light impulses of constant duration but various rates of flicker. Concerning what they called "B-type" reactions in the optical cortex, they made the following findings: the discharge rate increased from about 22 per second when 4 flashes per second were given to the cat, up to a maximum of about 25 per second when 7 flashes per second were administered. On further increase of flash frequency the rate of impulses diminished, so that at 10 flashes per second it was 18, at 18 flashes per second it was 15; and at 50 flashes per second it was 6.

THE INDIVIDUAL

Quastler and Wulff (11) investigated piano playing as an example of information transmission by individuals. Random music, constructed from a table of random numbers, was played by 3 young pianists who were excellent sight readers. After practice with this sort of music, the subjects estimated the highest rate at which they could play the music at sight. This rate was set on an electric metronome, and the first test piece presented. Successive numbers were then presented at gradually increasing speeds, up to a rate which was obviously well beyond their capabilities. All performances were recorded on tape and timed with a stopwatch. The errors in the different performances were scored by listening to the tapes. From these errors plus knowledge of the amount of music played in

a given time, rates of information transmission were calculated.

The results of these tests were as follows: The pianists made few errors up to a speed of about 5.2 keys per second. Thereafter as speed increased, precision was sacrificed and the error rate increased so that both the transmission rate per second and the number of correct keys per second remained approximately constant. Then the proportional trading of speed for precision went on until a second critical point was reached, which was the highest useful speed, about 10 keys per second. Beyond this rate the quality of performance deteriorated rapidly, as a result of confusion. The peak transmission rates were between 10 and 14 bits a second when 3 to 5 keys of the piano were used; 16 bits a second with 9 keys; 19 bits a second with 15 keys; 23 bits a second with 25 keys; and 22 bits a second with 37 keys. When the range was extended to 65 keys, a few errors occurred even at low speeds, and the transmission rate peaked at only about 17 bits a second, because frequent jumps had to be made between distant keys. There were individual differences among the subjects in the mechanisms of adjustment to information input overload. One sacrificed speed but minimized errors; another kept closer to the established speed than the others, though with more errors.

THE GROUP

At the group level Lanzetta and Roby (7) conducted an experiment with sets of 3 subjects seated in separate booths, communicating by an interphone circuit through which, by depressing a hand switch, any subject could speak simultaneously with both other subjects. In each booth were 2 switches, each with one "off" and 3 "on" positions. There were also printed operating instructions in the booth. A slide projector threw pictures of 2 simulated aircraft instruments on the front wall of each booth. The subjects were required to relay information presented to them by instrument readings to the proper booth and to execute control actions with their switches, based on relayed or directly available instrument readings. The settings

at the instruments were automatically re-recorded.

The rate of presentation of the slides was altered and other changes were also made in the situation. Average group error increased as the rate of information transmission in bits per minute increased. The maximum rate of information transmission in these groups was 12.64 bits per minute.

THE SOCIAL INSTITUTION

Data concerning information input overload in social institutions are rare, but Fritz and Grier(2) have studied information flow in human organizations larger than groups in direct contact, specifically the conversations between pilots and control tower operators during landings at an Air Force training base. In this situation the upper limit of transmission observed was about two bits per second, by their perhaps questionable calculations, and there was evidence that above such a rate overloading could occur.

The various researches reviewed indicated that at different levels a number of the mechanisms of adjustment mentioned above are employed, including omissions, errors, queuing, and filtering.

It appears that channel capacities *per channel* are less the larger the system. This is a regular, hierarchical difference, proceeding from a maximum of several hundred impulses (or bits) per second at the level of the neurone, to perhaps 200 at the organ system, to about 30 for the individual, to a good deal less for the group and the social institution, although these last values are less certain. While it is not entirely obvious from the literature at present, it does make sense that the more components there are in a channel, the more opportunities there are for loss of information at junctions between subsystems. Also, no such channel is faster than its slowest component. Of course large systems have many more parallel channels than small systems, so that they can handle more information overall, even though the average channel capacity is lower because the average channel is longer and has more subsystems.

OUR CURRENT EXPERIMENTS

An interdisciplinary team in our Insti-

tute is now collecting data on performance of systems at 5 levels under information input overload. For neurones we are trying to determine the method of information coding by a sort of cryptographic analysis. We plan to make a contingency table, plotting various sorts of inputs to neurones against their respective outputs, hopeful of learning by analysis of that table what code or codes are used. We have built an apparatus capable of stimulating neurones at various rates, with various degrees of regularity or randomness, and at various intensities. We are studying individual fibers in frog nerves, recording outputs from microelectrodes.

At the level of the organ we plan to study the visual nervous system of the cat, stimulating the retina electrically and photically with our apparatus and recording outputs through electrodes implanted on the optic nerve, the lateral geniculate, the superior colliculus, and the calcarine fissure area of the cortex. In these cell and organ level studies we expect to find performance curves rising to channel capacity, levelling out, and eventually breaking downward as input rates increase. Further, we expect to find in the cell the mechanisms of adjustment of omission and error (that is, stimuli not strong enough to fire the next neurone in a chain). Queuing may well also exist. The neural threshold constitutes a type of filtering. Whether other mechanisms of adjustment will be found is uncertain, but at the level of the organ, of course, multiple channels also exist.

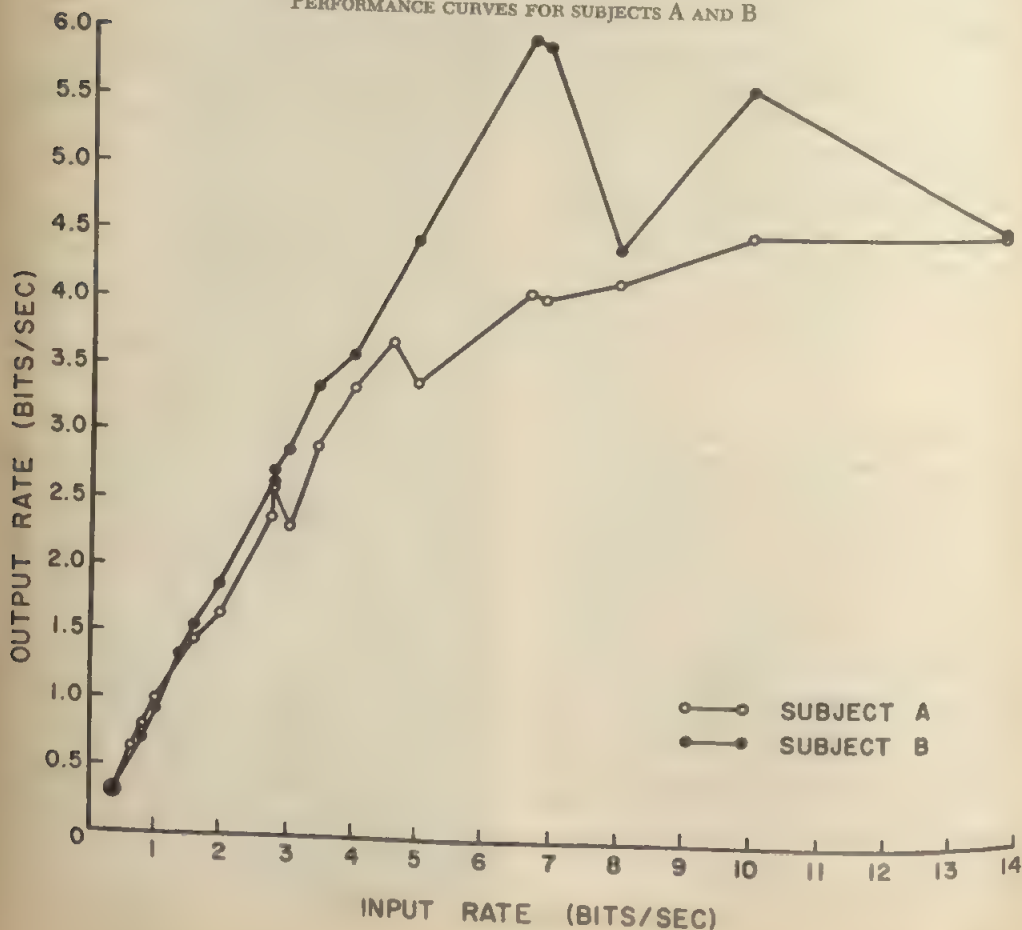
Individual and group experiments have both been done on the IOTA apparatus which we have designed and built. This is a piece of equipment by which stimuli are presented to a subject on a transparent ground glass screen about 3 by 4 feet in size, which sits on a table in front of him. He responds by pushing appropriate buttons arrayed before him. Stimuli are thrown on the back of the screen by a Perceptoscope, which is a sort of projector capable of showing movie film at rates of from one to 24 frames per second. The film contains little white dials with black arrows on them, which can appear in from 1 to 8 of the 8 two-inch wide vertical slots which run down the screen in front of the sub-

ject. Arrows can assume any one of 8 angular positions, like clock hands. Before the subject is a set of 8 buttons for each of the slots being used. Since he can see stimuli in a maximum of 8 slots at once, altogether he has 64 buttons, 8 sets of 8 buttons each. If an arrow in Position b appears in Slot 3, the correct response is to push Button b of the set for Slot 3. Any other response is an error. If the subject pushes none, that is an omission.

Queuing is also possible. The subject has a foot pedal by which he can lower or raise opaque strips behind each of the slots. At the beginning of each test only the top square in each of the slots being used is open so that light can come through. However, if the subject pushes his pedal, he can move the opaque strips to open up to

11 more squares, a maximum of 12. By pushing the pedal in the other direction he can close these up again, as he wishes. The moving picture film is so made that if an arrow appears in Position b in Slot 3 in Frame 1 of the film, it goes to the next lower position in that slot in Frame 2, and to the next lower in Frame 3, until it has gone through all 12 positions and finally disappears from the screen. In the meantime other stimuli may be appearing higher in the same slot or in others. When the subject pushes his queuing pedal, he therefore gives himself more time to respond to the stimulus before it disappears. He can filter by paying attention only to the arrows pointing up or to those pointing to the left, rather than to all 8 positions. He can cut categories of discrimination by

FIGURE 1
PERFORMANCE CURVES FOR SUBJECTS A AND B



pushing all 4 left buttons in Slot 3 if he is not sure exactly in which of the 4 left directions the arrow pointed, but knows it pointed toward the left, or by pushing all 8 buttons for Slot 3 if he simply saw an arrow but has no idea as to its direction. On occasion he can use multiple channels by working with both hands at the same time. Finally escape is possible, if he gives up and refuses to continue the task. So all the mechanisms of adjustment we have mentioned are possible on the IOTA.

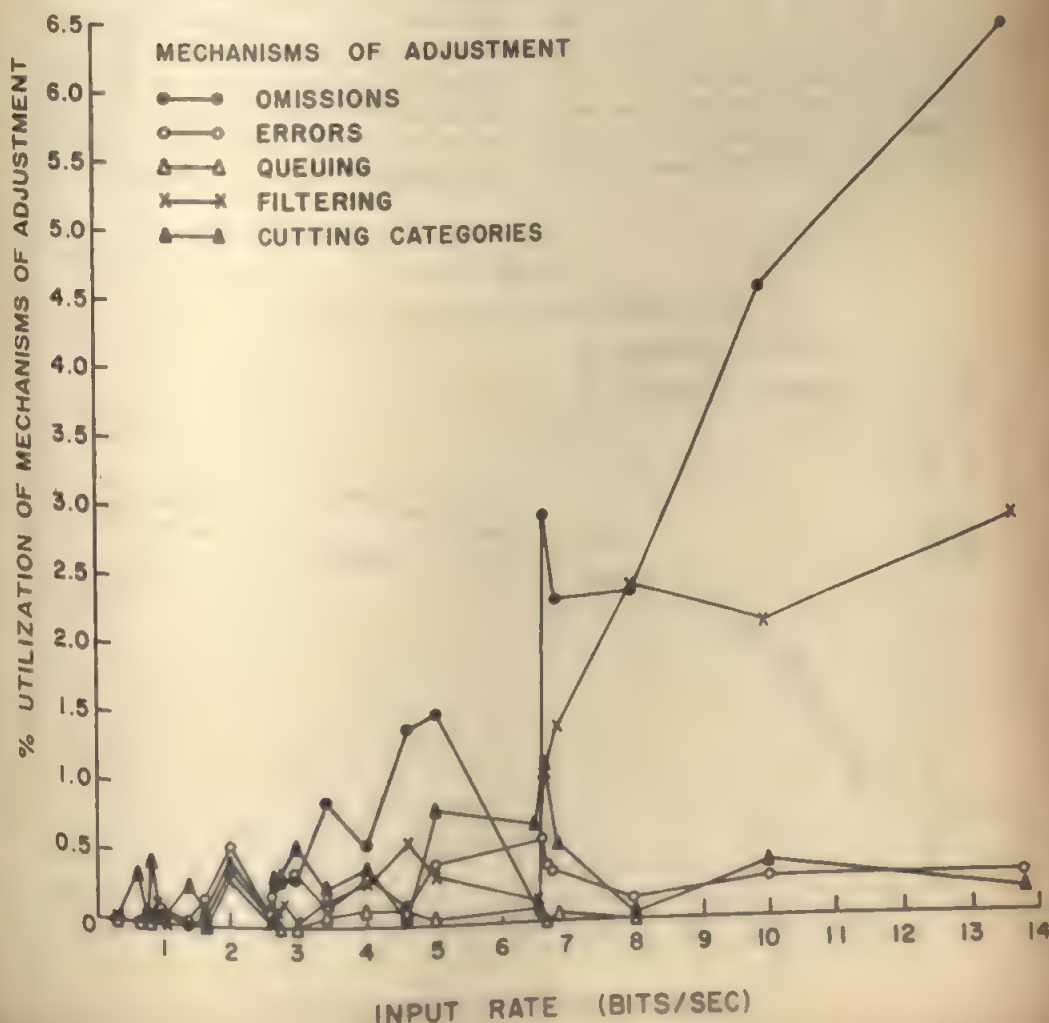
This apparatus can increase in several ways the amount of information per sec-

ond being processed : by speeding the rate ; by increasing from 2 to 8 the number of alternate positions for the arrows ; by raising the number of slots used simultaneously ; or by altering the degree of regularity or randomness of the presentations.

We have run experiments on this equipment with trained individual subjects. Performance curves for two subjects are seen in Figure 1. There are individual differences, but the curves have similar forms, rising to a channel capacity between 4.5 and 6 bits a second and then perhaps falling off, though our data so far do not

FIGURE 2

MEAN UTILIZATION OF MECHANISMS OF ADJUSTMENT BY BOTH SUBJECTS
AT VARIOUS INPUT RATES



make us certain this fall occurs. All mechanisms of adjustment mentioned above except multiple channels and escape were used by these subjects, as indicated in Figure 2. In general the use of these mechanisms—especially omissions and filtering—increased as the loads increased.

We have also begun to use the IOTA apparatus with groups. In this situation 3 members of the group, A, B, and D, face the screen. A calls out the slot in which an arrow appears, and B calls out a letter representing the position. C, whose back is turned to the screen but who is facing the buttons, then pushes a button in terms of the information he got from A and B. When C pushes a button a small red light in one of 8 positions lights up over one of the slots, indicating which button he pushed. If his push is correct, D says nothing. If the push is incorrect, D corrects him and C pushes another button until he finally pushes the right one. The performance curves from our runs with two groups (Figure 3), have the same general appearance as the performance curves

of the individual subjects, though at lower channel capacities between 2 and 2.5 bits per second. Also the use of mechanisms of adjustment (Figure 4) was comparable, although it happened that queuing was not employed. Group system organization involves new and interesting problems related to the various roles of its members and the effects of their intercommunication channels on the group performance.

Finally a comment on the level of the social institution. We are arranging to do research in the next few months on the overloading of a simulator developed for training and research on the operation of our national air raid warning system. In this simulator, groups of individuals in separate rooms receive information automatically, concerning planes flying in the particular air spaces for which they are responsible. They reinterpret these signals so that they can be plotted on the coordinates of information boards, for the military command. We plan to generate different presentation rates with various degrees of randomness of signals in different positions,

FIGURE 3
PERFORMANCE CURVES FOR GROUPS A AND B

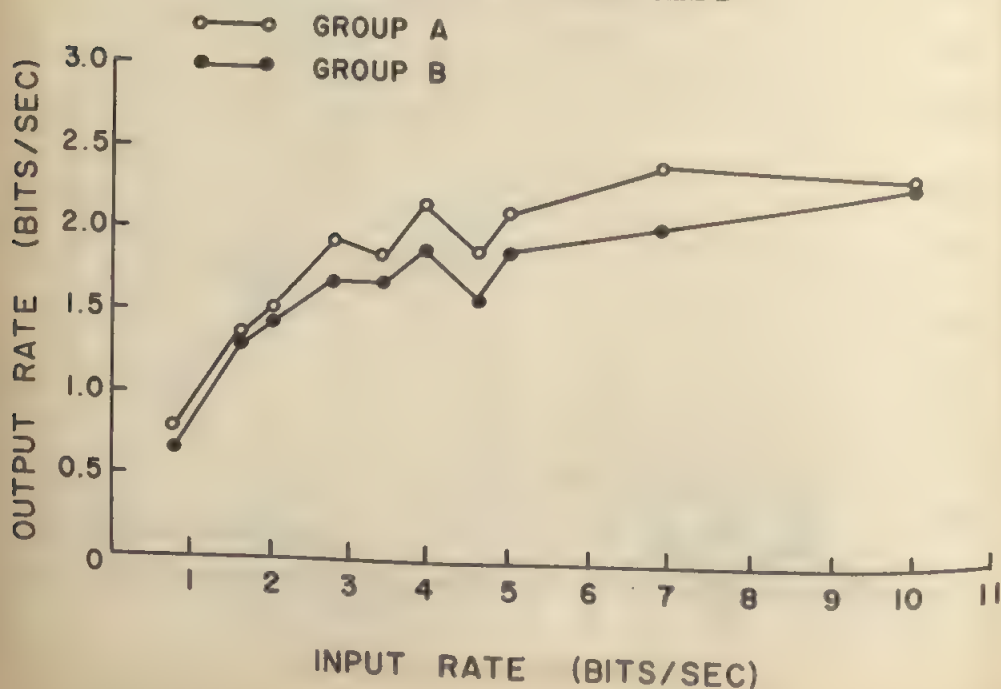
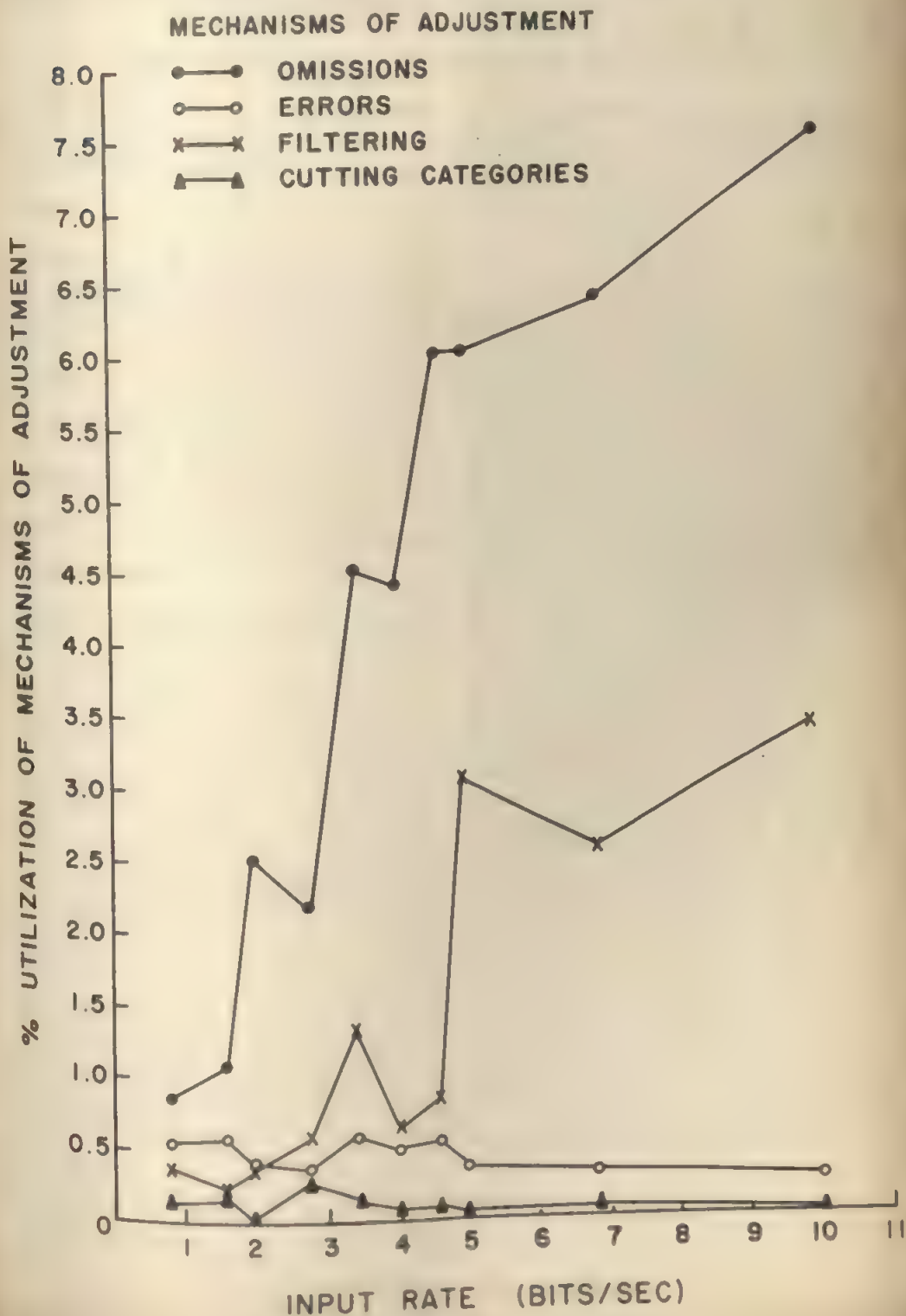


FIGURE 4

MEAN UTILIZATION OF MECHANISMS OF ADJUSTMENT BY BOTH GROUPS
AT VARIOUS INPUT RATES



and to discover the performance characteristics, channel capacity, and mechanisms of adjustment of this hierarchical, larger than face-to-face social institution. It is apparent that the same types of dimensions can be used in measuring this sort of performance as in smaller systems. Preliminary experiments done by others with such man-machine systems have shown that under high overload rates they can break down and that, as would be expected, the systems are under real stress in saturation raids and other overload circumstances.

CONCLUSION

Although more than a thousand related articles were reviewed in our literature survey, no references were ever found in them or in their bibliographies crossing from one level, say the neurophysiology of the cell, to another, such as group psychology. In one article an offhand suggestion was found that such generalization might be possible, but it was apparent that in present-day behavioral science cross-level similarities are rarely considered and general systems properties seldom taken into account. This, despite the fact that at all levels comparable performance curves have been discovered. Since such general systems characteristics are not sought, the same phenomenon, with different names, different dimensions and units, is being discovered over and over again at different levels. Known for many years in neurophysiology, it is only recently being recognized at the individual level. Yet it is probable that, if information input overload causes similar performance curves and mo-

bilization of comparable defenses at all levels of behaving systems, it can explain some of the psychopathology of everyday life and clinical practice.

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BRAIN DAMAGE FROM CHRONIC ALCOHOLISM : THE DIAGNOSIS OF INTERMEDIATE STAGE OF ALCOHOLIC BRAIN DISEASE¹

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Our studies of hundreds of patients in the past 7 or 8 years point to the rising incidence of acute and chronic stages of alcoholic brain disease; and to the existence of a midway stage, which we have called the intermediate brain syndrome(1). Our findings about these stages, particularly the intermediate one, have implications for practical treatment and a preventive program.

Pathologic drinking, chronic alcoholism and alcoholic addiction have become a major national problem. "From a public health standpoint," Maurer and Vogel(2) state, "probably the most important drug of addiction in the United States is alcohol." Bowman(3) raises the question why, out of some 70 million persons who use alcohol without undue harm, some 5 million use it at times to excess and about a million of them are alcohol addicts. He concludes that existing knowledge and tools must be used to the utmost, until research yields more adequate data regarding causes of alcoholism and methods of treatment.

Statistics show that organic brain disease in alcoholic patients is increasing. The first admission rate of alcoholics with psychosis to California state mental hospitals increased from 5.9 in 1940 to 7.5 in 1953 per 100,000 civilian population. This increase in alcoholic brain disease has partly replaced the incidence of syphilitic meningoencephalitis, which in the same period dropped from 7.5 to 1.5 per 100,000 population. In 1953 the first admission rate of alcoholics with or without psychosis, 34.3, almost equaled that for patients with schizophrenia, 36.2 per 100,000 population.

Many persons still find it hard to understand that alcoholism is a disease; and that

alcohol addiction is an advanced stage which may lead to such other serious diseases as hepatic, metabolic, renal, cardiac and organic brain diseases. The organic factors in chronic alcoholism tend to be overlooked, and the neglect accounts for many failures in treatment. These facts are sometimes ignored in the literature. For example, *Alcoholism as a Medical Problem* (4), a report of a recent conference sponsored by two New York medical groups, has no mention of the incidence and importance of alcoholic brain disease. A few investigators have called attention to this neglect. Lemere(5) points out that the habit-forming properties of alcohol have been insufficiently stressed in the literature; and that most alcoholics may drink for years "before they gradually and insidiously slip over into uncontrolled pathologic drinking." The loss of control he ascribes to "physical changes that take place in the brain after years of heavy drinking"(6).

In our experience in the psychiatric department of a private general hospital, a large proportion of patients have been admitted because of chronic alcoholism, many of them with serious physical complications. Alcoholic brain disease is usually classified as: (a) acute alcoholic brain syndrome, acute intoxication, delirium tremens and acute hallucinosis—a reversible stage; and (b) chronic brain syndrome, cortical atrophy and midbrain involvement, organic dementia or Korsakoff's or Wernicke's disease—an irreversible stage.

In the past 6 years about 750 patients were admitted for alcoholism to the psychiatric department. Electroencephalographic studies showed that in about a third of these patients the persistently abnormal EEG pattern would finally return to normal after months of sobriety. Cortical cerebral atrophy was present in most cases of chronic alcoholism. From these observations it was decided to extend the study over a comprehensive series of cases.

¹ Read at the annual meeting of The Society of Biological Psychiatry, Atlantic City, N. J., June 13-14, 1959.

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ELECTROENCEPHALOGRAPHIC STUDIES IN 227 CASES OF ALCOHOLISM

Electroencephalographic findings were persistent mild generalized 15-30 and 4-7 per second activity, at times with paroxysmal slowing and spiking. Fast activity parallels the acute clinical course of alcoholism and can improve. Persistent fast activity with slow activity spike discharges indicates organic brain pathology. These persistent abnormal EEG tracings are a valuable early diagnostic sign of organic brain disease. In some cases they precede the clinical symptoms of organicity.

Incidence of abnormality in 227 case studies: 78 cases with repeat EEG records: 36%; 25 cases with psychological tests: 11%; 12 cases with pneumoencephalograms: 5%.

1. *Acute stage, 95 cases:* Thirty-seven (37%) had abnormal EEG records, reversed to normal; 8 cases had psychological testing, 3 with evidence of organicity; 53 cases had normal EEG records.

2. *Intermediate stage, 61 cases:* Sixty-four (79%) had abnormal EEG records, usually reversed to normal slowly; 5 cases out of 6 psychological tests showed organic brain damage; 4 cases had pneumoencephalograms 3 of which showed cerebral atrophy; 17 cases had normal EEG records.

3. *Chronic stage, 48 cases:* Thirty-eight (79%) had abnormal EEG records; 11 cases had psychological tests: all showed evidence of organic brain damage; 8 cases had pneumoencephalograms: 7 showed cerebral atrophy; 10 cases had normal EEG records.

78 cases with repeat electroencephalograms

	Acute 15 Cases	Intermediate 39 Cases	Chronic 24 Cases
Unchanged	2%	14%	14%
Decreased abnormality	13%	21%	6%
Increased abnormality	0%	4%	4%

CLINICAL OBSERVATIONS OF INTERMEDIATE STAGE OF BRAIN DAMAGE

Personality changes: These show such symptoms as a rationalization of drinking, pathologic lying, infantile behavior, poor judgment, hostility, emotional lability, defiance, denial of illness, lack of insight.

Drinking pattern: It is an addictive, de-

pendent or compulsive drinking, usually with daytime and solitary drinking.

Physiological reactions: These include blackouts, withdrawal reactions, severe hangovers. There are delirious or convulsive episodes in about 50% of cases and systemic complications such as fatty liver, cirrhosis, polyneuritis.

Psychological test findings: The main ones are perceptual (visual) organization defect; intellectual and personality deterioration; and impaired abstraction.

A recent French report by Lafon and co-workers(7) of 100 cases of chronic alcoholism confirms our findings. The pneumoencephalographic studies showed cerebral atrophy in 78 (78%) cases; the atrophy often pronounced, was usually diffuse, and was cortical in 8%, subcortical in 44% and corticocortical in 48%. The degree of atrophy did not correlate strictly with the clinical manifestations. This frequency in chronic alcoholism suggests a causal link. The EEG was abnormal in 80 patients, normal in 20. In 58 (58%) patients the pneumograms and EEGs could be definitely correlated, principally in cases of longstanding alcoholism. In the 42% with discordant findings the radiologic findings were often significant while the EEGs were within normal limits.

Clinical symptoms: This phase of alcoholism is hard to determine accurately from only the clinical picture. The patient's drinking pattern often may indicate early alcoholic brain disease. He requires a morning drink to control his withdrawal symptoms and to keep on at work. His appetite may be poor and he does not eat enough, so that the nutritional imbalance is aggravated and avitaminosis may become a cause of progressive cortical atrophy. Fatty liver changes are common. He has now lost control over alcohol.

A significant early clinical sign is the appearance of blackouts or temporary periods of amnesia about happenings in the drinking episodes. The patient may resort to other addictive drugs to help allay his fears and tensions. Possibly within a year or two after the development of recurrent blackouts, brain damage will begin.

As the benders become more frequent, the patient drinks to relieve symptoms of

former bouts and cannot stop drinking even when he tries to. At this stage, changes in cerebral functions have usually begun and there is progressive impairment of frontal lobe brain functioning. The patient's increased dependency on alcohol and his inability to control drinking force him into elaborate rationalizations, excuses and lies which are aptly termed "alcoholic thinking" by Alcoholics Anonymous. The drinking pattern is compulsive, with solitary and daytime drinking. Poor judgment, emotional lability, infantile behavior, hostility, defiance and denial of illness, with almost complete lack of insight, make up the clinical picture. Too often these symptoms are ascribed to the sociopathic personality of the patient, whereas they are caused by the chronic toxic effects of the addictive drug ethyl alcohol, and are organic symptoms of brain damage.

The concept of alcoholism: The clinical picture, therefore, consists of two factors: the underlying, addiction-prone personality and the alcohol pathology. The two factors are not easily separated in a given case. After an acute episode the underlying personality disorder tends to be emphasized and the incipient stage of brain syndrome to be unnoticed.

Korsakoff's psychosis or Wernicke's disease forms the classic symptoms of chronic brain syndrome. There is hemorrhage or other degenerative processes in the mid-brain, due mainly to nutritional deficiency. Pathology is also usually found in the cortex, because alcohol by its narcotic and anoxic effect on nerve tissues leads to cell death and cerebral atrophy. Courville(8) recently called attention to these pathologic effects:

One of the more common noteworthy effects of repeated alcoholic episodes or of chronic alcoholism from constant excessive drinking is a progressive atrophy of the cortex of the frontal lobes. The change affects specifically the convolutions of the dorsolateral surface of these lobes. This relation to chronic alcoholism seems to be one resulting from the toxic effects of ethanol rather than malnutrition (avitaminosis).

He calls such chronic alcoholism

the most common cause of cerebral cortical atrophy in the fifth and sixth decades of life.

It may appear as early as the first few years of the fourth decade, particularly in individuals who have presented signs of a psychotic trend

A report by Tumarkin and coworkers(9) discusses the lack of correlation between clinical and laboratory signs. Though without gross pathologic findings, 7 chronic alcoholic male patients showed brain damage and significant intellectual impairment according to abnormal EEG records with bilateral, high-amplitude slow waves (3.4 per sec.) in the frontal and some parieto-occipital areas. Certain Wechsler-Bellevue subtests also indicated brain damage and significant intellectual impairment.

These data point to the thesis of a chronic brain syndrome of cortical pathology. Courville's comment of "individuals who have presented signs of a psychotic trend" accords with our observation that these patients suffering from cortical pathology do not show overt signs of organic psychosis, but rather an accentuation and exaggeration, to psychotic extent, of the pre-existing personality disturbance. Therefore the true nature of this state escapes the attention of many physicians, including psychiatrists, and at the same time helps to explain why so many chronic alcoholics do not respond to psychotherapy.

The theory, however, that persistent abnormal EEGs indicate the presence of organic brain pathology does not mean, conversely, that all organic brain pathology is accompanied by abnormal EEGs. In some cases of Korsakoff's psychosis, for example, the abnormal EEG can improve to normal despite the remaining organic pathology. A similar condition was seen in some advanced cases of parietal dementia (10).

Diagnosis of stages—the value of electroencephalography: As already noted, the differentiation of stages of the syndrome depends on a careful study of laboratory, clinical and psychological findings(11). Early in our observations we found that in patients who had been hospitalized because of an acute brain syndrome the followup EEG records showed various differences. In some cases the EEG quickly returned to normal while in others it remained abnormal. Abnormal EEGs, how-

ever, could not be equated with cortical pathology. Only when the patient's mental symptoms of acute intoxication related mainly to cortical functions and when the abnormal EEG record persisted after the acute episode, did the combined findings point to the chronic cortical pathology. Moreover, as reported by Lafon, in 58 of 100 cases with pneumoencephalographic studies, the radiologic and EEG findings could be definitely correlated.

Therapeutic implications: Abnormal EEGs, therefore, that do not clear up fairly soon after the acute brain syndrome is over point to some residual organic pathology. Prompt recognition of the early stages leads to a proper therapeutic program. Such patients first need medical care of the organic features of brain damage. Half of these patients have other systemic diseases, such as liver damage, which must be treated. Education of relatives as well as of the patient as to the significance of brain damage is important. Relatives are more tolerant of the patient's personality changes and unusual behavior, the better they understand that much of these disorders are beyond his control, but that the organic features will improve with prolonged treatment.

The patients require restraining care, either prolonged hospital or institutional control, until some insight can be established, or close supervision at home to prevent their access to alcohol. The judicious use of disulfiram or citrated calcium carbamionitrile to prevent drinking is an aid to home care of the patient.

The following 3 cases illustrate the value of repeated EEG, psychologic and pneumoencephalographic studies in pointing to intermediate stage of alcoholic brain disease:

Case 1: A patient in intermediate stage of alcoholic brain disease, reversible after 2 years of sobriety. A man of 50 had begun to drink heavily a few years earlier, soon after his son's death. At his first hospitalization for alcoholism, delirium tremens developed and was followed by two convulsions. An EEG recording taken on the day before the first convulsion showed slow activity with superimposed fast activity and minimal spike discharges. The second EEG, taken two weeks later, showed essentially the same findings except for a little in-

creased fast activity. The third and fourth EEGs, taken 1 month and 2 months after the first, still showed abnormally slow activity, but with decreased fast activity and less seizure activity.

An acute alcoholic bout necessitated the patient's second hospitalization 1½ years later. His fifth EEG recording, taken then, showed much improvement, with only very mild fast activity; the sixth, taken a month and a half later, again showed generalized slow activity, but without spike or fast activity. The patient was then put on disulfiram and was able to abstain completely from drinking. The seventh EEG, taken a few months later, showed a normal pattern.

Case 2: A male, age 45, in early phase of intermediate brain disease; psychological tests confirmed organic disease and pneumoencephalography showed early brain atrophy. The patient had been a social drinker since college days. After discharge from the Army, following marital discord and divorce, he began excessive and compulsive secret drinking. He remarried and for 2 years before his admission he had had temper outbursts and rages and physically abused his wife. Even small amounts of alcohol produced blackouts and irrational periods, and his wife had to watch over him constantly. Psychotherapy was tried for months, and he joined Alcoholics Anonymous, but with little change in personality or behavior. He agreed to hospital care when his wife threatened to leave him. Two EEGs were normal. A battery of psychologic tests was diagnostic of neurotic character disorder, with diffuse organic impairment defect in immediate memory, some concreteness in thinking and a disturbance in his visual spatial organization. The pneumoencephalogram showed mildly dilated ventricles, dilated basal cisterns and all the subarachnoid spaces, suggestive of brain atrophy. This patient now takes disulfiram daily and has remained abstinent for 2 years. He is successful in both his home life and his business.

Case 3: Illustrates a case of intermediate brain disease that reached irreversible changes. A woman of 49 who had drunk excessively for many years, with violent episodes and extreme hostility toward her family, had had grand mal seizures at times during her drinking. During her first hospitalization she denied having any problems, blaming all her difficulties on her family. Of the 3 EEGs taken in her 3 week stay, the first showed severe fast activity and some slow activity; and the second and third, moderate fast activity but no slow ac-

tivity. A fourth EEG, taken a month after her discharge, showed an increased fast activity. Upon her second hospitalization, 2 years later, she was extremely demonstrative and euphoric, though oriented; a grand mal seizure on the fifth day was followed by a 2-day period of delirium. The fifth EEG, taken just before the delirious episode, showed severe fast activity and some slowing; and the sixth, taken 18 days later, showed some improvement with less fast activity, no slow activity and recovered alpha.

Four psychological tests (Rorschach, Bender-Gestalt Designs, Wechsler-Bellevue Digit Span Test and the Wechsler-Bellevue Block Design Test) were administered during the second hospitalization; all showed definite evidence of organic impairment. Pneumoencephalographic x-rays of the brain made elsewhere showed definite cerebral atrophy.

In the following case the disease was too far advanced for rehabilitative treatment to be effective:

Case 4: Male patient, age 49, illustrates a severe grade of chronic alcoholic brain disease, with permanent atrophy of the brain. The patient had been a problem drinker for 20 years. Presumably his drinking contributed to marital difficulties and in a few years his wife left him. He had lost many jobs because of drinking, but his father's influence had always helped him to find new work. After the father's death in 1954, the patient lived alone with his mother. He drank almost continuously except for periods when his mother took him on trips. He had been in contact with A.A. since 1949 and in recent years had gone to meetings quite regularly, but continued to drink. While living with his mother the patient tried to conceal his drinking from her, and she in turn acted constantly as a watchdog and nurse. During periods of drinking he would become ugly and sarcastic, telling his mother he despised her; on one occasion he physically abused and almost killed her. In 1954, after he had lost a job because of drinking he was committed to a state hospital for 3 months. Upon discharge he took a trip abroad and impulsively, on short acquaintance, married again without having previously obtained a divorce.

At the insistence of his mother and through the influence of A.A., he was finally brought for evaluation. An examination revealed an overly familiar, very pleasant, passive male patient. Although he admitted all of his difficulties with drinking, he minimized their importance and had no insight into the serious-

ness of his condition. He felt he could do all right if he could move to his own apartment, away from his mother. He saw no reason why he should either stop drinking or attempt to find useful work. He readily agreed to go along with our recommendations but it was quite obvious that he could not carry them out.

An EEG revealed a distinctly abnormal record with a mixture of slow waves and fast activity. A variety of psychological tests showed a generalized deterioration of his personality functioning, with evidence of organic factors, defects such as confusion and memory impairment, all suggesting serious brain damage. A pneumoencephalographic x-ray study of the brain was carried out and it was found that he had almost twice the normal amount of cerebrospinal fluid and there was marked enlargement of the entire ventricular system and patchy evidence of brain atrophy. He made no improvement and had to be committed to a state hospital.

DISCUSSION OF THERAPY

Since in many chronic alcoholic addicts alcoholic brain disease eventually develops, the widely held concept of alcoholism as primarily a symptom of a character disorder must be modified. In the initial stage of alcoholism, before addiction is firmly established, psychotherapy is often helpful. But after the onset of alcoholic brain disease all therapeutic efforts must be directed toward helping the patient rehabilitate himself. This means first, that the patient must completely abstain from drinking, in order to regain physiologic balance. Therefore individual or group psychotherapy and the aid of Alcoholics Anonymous should be mainly supportive. Disulfiram for chronic compulsive drinkers usually can give complete chemical restraint; combined with psychotherapy it is very helpful. Again, education of the patient's family as to the need for prolonged therapy and careful followup and enlistment of their aid in this program are essentials to successful therapy. The patient must continue with abstinence for the rest of his life and often he may become fairly well rehabilitated.

Even though our patients are informed of the seriousness of alcoholic brain damage, they are especially difficult to treat and may continue drinking and soon die of intercurrent disease or by suicide or become per-

manent institutional cases. If control can be established until the organic features clear and fairly normal judgment returns, then insight can gradually be established and motivation to learn to live without alcohol is aroused. Psychiatric evaluation to determine whether the alcoholism is symptomatic of a neurosis or psychosis must be also considered.

After insight is gained, psychotherapeutic efforts may be fruitful along with social and other supportive measures such as AA to bring about effective rehabilitation. I (AEB) have described our overall treatment program elsewhere(12).

PUBLIC HEALTH PROGRAM

The problem of alcohol addiction should eventually be tackled at a national level, with general education of the public as to the prevalence of chronic alcoholism and need for its control. Early detection and recognition of addiction and organic brain disease would require large numbers of professional personnel to carry out extensive surveys and research studies. Problems of treatment and of prevention would have to be handled at the level of a public health program, with substitution of a public health medical approach instead of the present punitive one. By this means many persons could be reached before addiction becomes established and brain disease becomes irreversible. Those patients with brain damage could be rehabilitated to the point where they could preserve sobriety and become useful members of society.

In all large cities, skid rows comprise a major problem. For example, in San Francisco, the country's most alcoholic city, the relief and welfare program for alcoholics costs taxpayers \$4 million a year. It is estimated that about a thousand of these alcoholics repeatedly figure in arrests and other legal actions. Undoubtedly these persons suffer from alcoholic brain disease and should be so treated.

The problem must eventually be tackled at a national level, in our opinion, because it is too large a problem for municipalities or individual states to finance. The cost of a program of detecting addicts with incipient or established brain damage should be borne by a tax on profits of the liquor

industry at the source—breweries, wineries and distilleries. Although these industries do not cause alcoholism, the use of their products contributes to the problem of addiction and mental deterioration. The cost to taxpayers of a nationwide rehabilitation program would be prohibitive, since the total number of addicts needing treatment exceeds the nation's state hospital population.

CONCLUSIONS

This study indicates the presence of a syndrome of an intermediate stage of alcoholic brain disease, midway between the acute and the chronic stages. In the intermediate stage the EEG changes, the clinical findings and the psychological test data lead to the diagnosis of incipient brain damage; the presence of cerebral atrophy can be confirmed by pneumogram.

The study of 227 cases showed 98 in the acute stage, 81 in the intermediate stage; and 48 in the chronic stage. In the 81 patients in the intermediate stage, 64 (79%) had abnormal EEG records, with organic brain damage indicated in 9 cases by psychological tests or pneumograms or both.

The implications for treatment are summarized: 1. The persistence of abnormal EEG records after the acute episode emphasizes the need for comprehensive medical treatment of the organic factors, before the brain damage becomes irreversible. These organic factors are often erroneously considered to indicate personality disorders, with consequent ineffective therapeutic measures. 2. The patient under institutional or other supervisory control must stop all use of alcohol. 3. After improvement of the organic features, the patient is ready to begin individual and group psychotherapy and a general rehabilitative program, including the help of Alcoholics Anonymous and similar organizations. 4. The relatives must be made to understand the seriousness of the disease, and their cooperation enlisted in the treatment program. 5. The problem of alcoholic addiction must eventually be attacked at a national level with steps to insure early detection of addiction and organic brain disease, and with a broad program of control of drinking and of rehabilitation.

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CURRENT STATUS OF CHILD PSYCHIATRY¹

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That child psychiatry is a sub-specialty of psychiatry requiring special training for the development of competence has been declared in the establishment of certification in child psychiatry by the American Board of Psychiatry and Neurology. This arrangement postulates that in order to learn the techniques and procedures required in the treatment of children a psychiatrist must initially equip himself with an understanding of the clinical material and principals involved in the practice of adult or general psychiatry. With this foundation he can undertake the specialized training that is necessary for work with children. The Board requires a minimum of two years of approved training in a satisfactory facility for the practice of child psychiatry. The specialized training in child psychiatry must follow a minimum of two years of training in general psychiatry. The adequacy of the candidate's basic training is measured through the requirement that he become certified in psychiatry by the American Board before he applies for examination of his competence in child psychiatry.

For 50 years there have been psychiatrists who devoted their full time to work with children. With a primary interest in juvenile delinquency and probably influenced by Southard's and Fernald's use of ancillary disciplines in a collaborative program, William Healy organized the first clinic for children to serve the Chicago juvenile court in 1909. By 1912 he had moved to Boston, and with The Judge Baker Foundation developed a program that offered services for the broad spectrum of difficulties which presented during childhood. The delinquent was recognized as a troubled person who declared his need for help through his misbehavior and who, because he was not mature, could not provide and plan for himself with sufficient

judgment and perspective. Efforts were directed toward understanding the child in the use of his capacities within the various environments which comprised his life.

With the assistance of the Commonwealth Fund of New York, the National Committee for Mental Hygiene nurtured the development of clinics sponsored by a variety of community interests. The term "community clinic" came into common use to designate that the service was part of an agency structure designed to meet a need which was recognized by the various organizations which served children. The home, the school, the orphanage, the family agency, the settlement house, and group recreational agency were concerned about children who could not accommodate themselves satisfactorily. The bureau of Children's Guidance of New York became an active training center and professional staff was developed which could man the newly established clinics. Demonstration Clinics were financed for specified periods of time. The effectiveness of the early efforts is attested by the record of communities which continued the services by providing on-going funds through civic, Community Chest, or other sources.

During the 1920's work centered around the principle of assisting the child to adjust to the setting in which he lived. The standard procedure involved obtaining an extensive history which at its best was an evaluation of the important influences which impinged upon the child. Histories became more than descriptive and were a compilation of the attitudes and reactive tendencies of each member of the family, teachers, classmates, friends, religious advisors, *etc.* Interviews were held often with others than the parents. When children were in foster care, information was obtained from foster workers and perhaps directly from the foster parents.

Many patients were referred by agencies, and it was the general practice to maintain a central social register in each community so that a clinic could know when the family had had contact with another social agency.

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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The cooperative case was one in which the agency with professional staff (usually social casework) contributed historical information and took responsibility in whole or in part for carrying out recommendations. The service was rendered to the referring agency as well as to the family.

The history included an account of the child's development both physically and socially. The evaluation of his aims and tendencies was augmented by the psychologist's measurement of his potentials with standardized tests (later with projective techniques) and the psychiatrist's appraisal in the interviews with the child. The information so compiled was reviewed at a diagnostic staff conference to which representatives of other agencies, teachers, ministers, *etc.* might be invited. At such a conference recommendations were formulated and their commission was assigned to members of the clinic staff or others. The clinic was in the position of evaluating the influence of parents and other professional workers upon the child and often found itself directing the practices of schools and other agencies.

While other social agencies were learning to recognize the variations in ability and behavior of children, the clinic easily assumed an authoritative role and the psychiatrist was the natural leader of the clinical group. Social workers and psychologists learned to recognize the common disorders of children, and case loads included more and more children who were not grossly deviant. Rivalries developed among the disciplines within some of the clinics and even between clinics and other self-sufficient agencies.

Satisfaction with diagnosis emphasized the importance of treatment. Interest in treatment was stressed further as knowledge of the nature of the difficulties of children became diffused beyond the profession of psychiatry. By the end of the 20's, a good deal of work was being done with parents. Initially, the purpose was to prevent parents from interfering with the efforts that were made to benefit the child. This sometimes took the form of treatment of the parent which might be attempted by whichever member of the clinic team had developed skill in psychotherapy. Case-

workers and psychologists, as well as psychiatrists, were turning to personal analysis as a measure of enhancing their skill in therapy, and the role of the psychiatrist as director or leader of the clinic group was sometimes challenged.

Skills in individual psychotherapy did develop. Americans went to Europe to learn the techniques of the analyst, and during the 30's many European analysts came to the United States. In this country effective treatment procedures were developed by child psychiatrists who were not identified with the analytic movement. Analyst and non-analyst have worked side by side in the United States and sometimes within the same clinic. We are still progressing in our techniques of individual treatment of children steadily enough so that it is yet too early to outline exclusively what should be the training of a child psychiatrist and what his treatment techniques. There is, however, general agreement about a good deal that he must know and about the training and working experiences that he must have.

As the contribution of the clinic centered increasingly around the provision of psychotherapy, the contacts of the clinic staff became more limited to members of the patient's family or those social workers in foster care agencies who had direct responsibility for the child. As mentioned above, the professionals in other agencies or institutions became informed on the psychological aspects of deviations in growth and development and did not call upon the clinics as frequently for diagnostic assistance. They resented the efforts of clinics to direct their practices. Clinical workers also began to appreciate the complexity of other professional tasks and became cautious about assuming responsibility for recommendations, the effectiveness of which rested with the work of another agency.

Work became oriented around the diagnosis and treatment of the child. There was a period when certain clinics saw their tasks as the treatment of the child-parent relationship. This gave way to a recognition that treatment was with the individuals who were in relationship to each other, with the child as the patient. A variety of approaches developed in considering the

with the parent. While some of the work has been done as the treatment of the parent rather than viewed with the parent as a casework service. I believe that in the majority of clinics today the procedures which are carried out with parents are materially influenced by a primary concern for the successful treatment of the child. One of the major advances in modern psychiatry has been the understanding of the importance of the influence of other members of the family upon a patient. This has developed from the work of the child guidance clinics.

As clinical contacts in child psychiatry became more circumscribed to the child and his parents or members of his immediate domestic environment, private office work became feasible. Private practice had to await the development of clinical skill and in turn understanding of the remainder of the medical profession and the lay public so that services would be solicited. Early attempts were made to treat children individually with a minimal amount of work with the parents. Private practitioners, including child analysts, quickly recognized the importance of doing some work with parents. It may indeed be that the most important influence in the growth of private child psychiatric practice was the general acceptance which psychiatry enjoyed following World War II. I believe that private practice was an outgrowth of the circumstance that procedures involved in the treatment of the child and his guardians could be encompassed physically within the private office.

It remains for experience to determine whether individual practice, which may indeed include the collaboration of other disciplines, will become a common method for the provision of child psychiatric services to those families who can afford a private fee. Today there are adherents of the private office arrangement and adherents of the clinical method, each of whom considers his way of practice to hold forth advantages. The answer to this question may rest upon personal preference. It may be determined economically. It may be influenced by forces which bear on the practice of medicine generally which we cannot now foretell. In any event, private practice

in child psychiatry has become a reality since World War II even as the clinics themselves have become more numerous.

With the growth of child psychiatry it was inevitable that professional associations developed. The National Committee for Mental Hygiene had benevolently fostered the development of the clinic with the financial aid of the Commonwealth Fund. During World War II the Division of Community Clinics of the National Committee for Mental Hygiene organized meetings of the clinical directors to elicit their participation in the management of the affairs of the clinics. Practice and procedures were discussed and soon the annual assembly of clinic personnel included meetings of social workers and psychologists. Following the war, it was evident that the growth of the clinics would be so rapid and so extensive that coordination through personal visits and interest by members of the staff of the National Committee for Mental Hygiene would be difficult.

The need for authoritative definition of standards for practice and training was emphasized as new clinic boards were being organized and staff positions created which could not be filled readily. At a meeting of clinical directors convened by the National Committee for Mental Hygiene a decision was made to create the American Association of Psychiatric Clinics for Children (A.A.P.C.C.).

This Association was initially concerned with protecting the level of child psychiatric clinical practice. The policy was to uphold the professional standards of the professional disciplines which worked collaboratively in the clinics. Social casework had clearly defined standards for training and experience. They were established by the American Association of Psychiatric Social Workers (later A.A.S.W.). Clinical psychology was actively establishing itself as a clinical and professional discipline and shortly declared its training requirements which were implemented at the graduate level in universities. Child psychiatry had no defined standards for the determination of competence of its representatives beyond the achievement of certification by the American Board of Psychiatry and Neurology which was in adult or general psy-

The Board had established the precedent of accepting a satisfactory year of training in a children's clinic as the end of the 3 years of required academic training.

The AAPCC defined requirements for the training of child psychiatrists who were to work in the member clinics. It also outlined requirements for clinics that were to conduct training which would be approved by the Association. Because these were the only existent standards, other organizations supported these requirements, and AAPCC standards came to have an influence in American psychiatry beyond that which was initially conceived. Review and approval by the Association, however, could be extended only to those clinics which were interested in being identified with the Association and involved only personnel employed in the clinics.

During the years following World War II, there was controversy over the opinion held by child psychiatrists that special training was required to do adequate psychiatric work with children. The creation of a Committee on Child Psychiatry within the newly formed Group for the Advancement of Psychiatry, the establishment of a Committee on Child Psychiatry in the American Psychiatric Association, the naming of a Section in the APA and the establishment of a Committee on Training in Child Analysis in the American Psychoanalytic Association were acknowledgements of the discreteness of the field. These units created a forum for child psychiatrists who were in individual practice, and included as well the psychiatrists from the clinics.

A recognition that the scope of child psychiatry went beyond the organized clinics, including individual practice and some individual teaching appointments, brought forward an interest in an association of child psychiatrists. Concomitantly, sentiment developed in certain areas of organized general psychiatry that within the association of clinics the interests of the child psychiatrist might be subjugated to a multidisciplinary majority. The American Association of Psychiatric Clinics for Children itself recognized that child psychiatry differed from the other professional disciplines in that it had no set of standards

for training which was declared and upheld by a group within its own discipline not officially associated with AAPCC and which could serve as a standard for the evaluations conducted by AAPCC.

These influences and a desire for academic interchange within a professional group limited to the child psychiatrists led to the organization of the American Academy of Child Psychiatry. The Academy has established criteria for the invitation of child psychiatrists to its membership. It has been considering a set of standards for training. It is in the process of determining how actively and extensively its membership wishes to assume leadership in American child psychiatry.

A year ago the Council of the APA endorsed, on the joint recommendation of its Committees on Child Psychiatry and on Standards for Hospitals and Clinics, a statement that child psychiatry was a subspecialty of psychiatry and that competence called for special training. The APA later accepted in principle a statement of Standards for Training that called for 2 years of specialized training in child psychiatry in addition to 2 years of training in general psychiatry for those who would work with children.

As early as 1949, sentiment was advanced for the establishment of certification in child psychiatry. The American Board of Psychiatry and Neurology looked favorably upon the proposal and consulted a group of child psychiatrists. Possibly because opinions on procedure were not consistently supported, the Board did not act at that time.

In the summer of 1957, the matter of certification in child psychiatry was again raised by the American Board of Psychiatry and Neurology. Suggestions had been advanced that there be an independent board in child psychiatry. This might have been a difficult proposal for which to obtain the approval of the Advisory Board for Medical Specialties which has declared itself against the unnecessary recognition of additional specialties in the field of medicine. It appeared that there was reasonably general accord among child psychiatrists that certification be carried on under the authorization of the parent American Board of

Psychiatry and Neurology. The arrangement declares child psychiatry as a subspecialty of psychiatry.

After consulting a number of individuals in the field of American child psychiatry, several recognized leaders were summoned to a meeting to consider the advisability of recommending the establishment of certification procedures. Following the favorable outcome of this meeting, a Committee on Child Psychiatry consisting of 6 members was appointed by the American Board of Psychiatry and Neurology. Meanwhile the Advisory Board for Medical Specialties had been asked to approve the project. The Advisory Board authorized the American Board to undertake steps to evaluate authoritative opinion in child psychiatry and notified the Boards in the other specialties.

The Committee on Child Psychiatry met in June, 1958, with the president and secretary of the American Board of Psychiatry and Neurology, and drew up a statement of requirements and of procedures for examination and certification of child psychiatrists. The American Board of Pediatrics requested further consultation, and at a meeting of representatives of that Board and the American Board of Psychiatry and Neurology, an agreement was reached to include a pediatrician on the Certifying Committee. The pediatrician would act in an advisory capacity and would not serve in the examination of candidates. Members of the Committee on Child Psychiatry were among the representatives of the American Board of Psychiatry and Neurology who attended the meeting with representatives of the Board of Pediatrics. The statement of policies regarding training, application and examination was eventually approved by the various Boards and the Advisory Board for Medical Specialties.

The American Board of Psychiatry and Neurology then established a Committee for Certification in Child Psychiatry. This was in February, 1959. The brochure of Information for Applicants Applying for Certification in Child Psychiatry states that

This was done to establish officially the field of child psychiatry as a definite area of subspecialization in psychiatry and to provide a means of identifying the properly trained, ex-

perienced child psychiatrist from those who claimed proficiency in this field without adequate background and qualifications.

The brochure states further :

The actual mechanics of certification of qualified candidates and the establishment of basic policies has been delegated by the American Board of Psychiatry and Neurology to this special committee which will operate under the supervision of the parent board. This Committee on Certification in Child Psychiatry consists of six certified child psychiatrists appointed by the Board and responsible to the Board. As a Committee of the Board, it operates under all the basic policies established by this corporation.

Psychiatrists who have been continuously in the full time practice of child psychiatry since July 1, 1950 or before may apply for certification on record (without examination). If the major interests and activities of their practice is with children or adolescents, this will be regarded as full time practice of child psychiatry. Applicants must have been previously certified in psychiatry by the American Board of Psychiatry and Neurology except in those instances where this requirement has been waived by the Board for good and sufficient reasons.

This certification is for those who are currently in the specialty of child psychiatry and not for those who have been in the field in the past. Applicants who have previously practiced in the field of child psychiatry but who have left this specialty for other types of practice must show that in the two years preceding application their major interests and activities have been in the field of child psychiatry.

Those child psychiatrists not qualifying under the above rules and regulations will be considered as applicants for certification by examination. Their major interests and activities in their current practice must be devoted to psychiatric problems of children and adolescents. Should they have left the field of child psychiatry for other types of practice but otherwise fulfill the training and experience requirements, they must show that the two years prior to application have been in specialized practice in child psychiatry.

To qualify for examination candidates must have 6 years of psychiatric training and experience. Two years shall have been satisfactory training in child psychiatry in programs acceptable to the Committee on Certification. The statement is included in the brochure that

It is advisable that those seeking the certificate of specialist in child psychiatry who receive their primary training in psychiatry should have training in the pediatric aspects of general medicine. Such training may be offered in lieu of two years of practice experience.

Certification will identify the properly trained and experienced child psychiatrist who has been actively engaged in the field. It will be necessary to establish a basis for the evaluation of training and of the settings from which training will be approved. This will be an early task for the Committee on Certification in Child Psychiatry.

It is too early to anticipate fully the influence certification will have in the field of child psychiatry in relation to practice and to professional organizations. The competence of practitioners who offer their services to children should quickly assume a generally adequate level. Influences in relation to professional organizations will manifest themselves more gradually.

The American Psychiatric Association does not have standards for outpatient clinics in either child or adult psychiatry excepting as these clinics are associated with a mental hospital. There is a Committee on Standards for Hospitals and Clinics. Outpatient clinics currently achieve approval as they meet the recommendations for mental hospital personnel and the approval of the hospital administrator. There is need for the declaration by the American Psychiatric Association of standards for outpatient clinics which operate independently.

The A.A.P.C.C. will now be in a position to support the standards for training in child psychiatry determined by the Committee on Certification in Child Psychiatry of the American Board of Psychiatry and Neurology rather than establishing require-

ments of its own. Requirements for certification are similar to those outlined for the director of a clinic approved for training with A.A.P.C.C. They are higher than those enforced in evaluating the competence of the psychiatric director of a clinic asking consideration for membership. If standards for training in child psychiatry become sufficiently well defined, A.A.P.C.C. will be in a position to place its major emphasis on the composition and collaborative working arrangement within the clinic group.

The Academy of Child Psychiatry has membership requirement which are somewhat more exacting than those defined by the Board. More working experience is necessary, and the candidate must have had a primary and long continued interest in child psychiatry. At present, certification by the American Board of Psychiatry and Neurology is a membership requirement for those individuals who completed their training after January 1, 1946. The Academy has not yet had an opportunity to consider whether it will require certification in child psychiatry of those who are to be invited to its membership.

In half a century child psychiatry has become established as a field of medical practice within the specialty of psychiatry for which special training is necessary to acquire competence. Standards and procedures for the evaluation of candidates for certification and their training will be refined as examinations are conducted. Standards will be developed also for the evaluation of the setting in which satisfactory training can be obtained. The professional organizations concerned with the field of child psychiatry will continue to provide the forums from which knowledge and recommendations for standards of practice and training will evolve.

THE MIND-BRAIN PROBLEM AND HUGHLINGS JACKSON'S DOCTRINE OF CONCOMITANCE

MAX LEVIN, M.D.¹

PART I: WILL, VOLUNTARY AND AUTOMATIC FUNCTION

The first object of this paper is to indicate the value of Hughlings Jackson's "doctrine of concomitance" in regard to the relation of mind and brain. Of all who have tackled this thorny problem, it seems to me that Jackson was the most realistic.

More specifically, I shall consider those cases in which the patient has lost the ability to perform an action on command, i.e. voluntarily, though he can still do it spontaneously or automatically. I hope thereby to achieve a double purpose: to consider one aspect of mind, namely, will or volition, and to point to a second great contribution of Jackson's, his concept of "reduction to a more automatic condition."

In his work on aphasia Jackson showed that it is not words that are lost, but the use of words in particular contexts. A favorite example was the man with motor aphasia who cannot say "No" on command, but can say it spontaneously. Thus if asked a question calling for a negative reply, he answers "No." And when he is emotionally excited, as when he sees his child creeping too close to the fire, he shouts "No, no, no."

Here, then, is a man who cannot say No when he "wills" to, but can say it spontaneously or automatically. Does this mean that there are centers for speech, which operate under the command of higher centers for will and mind, and that when we undertake to say or do something, suitable impulses pass down from these higher psychic centers to lower speech and motor centers? Such an explanation is attractively simple and might appeal to a first year medical student. It should not appeal to mature physicians, but it does to some, for here is what an outstanding neurologist once said. Speaking of epileptic twilight states (in the days before electroencephalography) he said they are also called psychic

equivalents, because "they are the result of a discharging lesion in psychic centers, just as grand mal is the result of a lesion in motor centers." He assumed that there are centers for the higher and more abstract function, mind, superior to and in command of lower centers for the more concrete activities, movement and sensation.

Jackson opposed such a view. He held that the *entire* brain is sensorimotor, not just the areas so designated by conventional neurology. He denied that the highest cerebral centers are basically different from lower centers. He said it would be incredible if, as one passed upward in the hierarchy of levels, one came suddenly upon centers constituted differently from those below. On the contrary, higher centers are constituted like lower centers, being only more complex. He regarded the central nervous system as a mechanism for the coordination of impressions and movements. (By "impressions" he meant impressions made on receptor organs.) Spinal centers achieve a relatively simple coordination, while higher centers achieve one that is more complex. All cerebral action is reflex, even in the highest cerebral centers, which he regarded as the "organ of mind." Of course, his conception of "reflex" is broader than that held by some neurologists.

REFLEX ACTION IN THE HIGHEST CEREBRAL CENTERS

Some neurologists would limit the term reflex to "automatic fixed inborn responses" of subcortical structures. These responses are relatively automatic and inflexible, "a necessary consequence of anatomically prearranged fixed nervous channels." By contrast, responses from the cortex are variable, flexible, relatively unpredictable. Neurologists of this school of thought deplore Pavlov's term, conditioned *reflex*, which "leaves the word 'reflex' with no meaning whatever, except response to stimulus."

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(Quotations in this paragraph are from Denny-Brown(1).)

Elsewhere I have tried to show why Jackson's view is preferable(2). As an example of reflex action in the highest cerebral centers, the following incident is submitted.

Driving on a quiet country road, alone in my car, I was deep in thought. About to overtake a car just ahead, I sounded two sharp warning notes on my horn; I then passed the car, still deep in thought. A few moments later I became aware that I was humming the opening theme of Beethoven's Third Symphony, the theme that immediately follows the two great staccato opening chords. My curiosity aroused, I wondered why that particular theme had intruded itself on me at that moment. Reviewing the antecedent situation, I remembered the two staccato notes of my horn, which had "reminded" me (without my being aware of it, for I was deep in thought at the moment) of the two opening chords of the symphony. The theme followed in due course, and I hummed it unconsciously until the fourth or fifth bar, when suddenly I noticed I was humming. The humming was a reflex, a response to the two notes of the horn.

This incident shows two things. First, mentation can be unconscious (not that this proposition today stands in need of proof). Second, mental processes are reflex, their unpredictability notwithstanding. No one can predict the result, if any, that will ensue when a driver in deep reverie honks his horn twice. But the response in this instance, the humming of the theme, was clearly a reflex. It is an example of "chaining," a term used in psychology to denote the process whereby one response provides the stimulus for the next, as in reciting a poem from memory, when each line as it is spoken brings the next one to mind. An unpredictable response is no less reflex than a predictable one; it is only more complex.

But, really, is there such a thing as unpredictability? If we knew everything about the brain, and knew its precise state down to the smallest detail at a given moment, we would be able to predict the response to any stimulus, no matter how

complex. Unpredictability is but a measure of our ignorance.

THE DOCTRINE OF CONCOMITANCE

With his materialistic view of the highest cerebral centers, according to which they resemble the lower spinal arcs in basic constitution, differing only in being more complex, how did Jackson relate mind to brain? Obviously we need a brain to think, but it is *we* and not the brain that thinks. The brain is merely a mass of tissue. Jackson asserted that the question is insoluble. One can only say that mentation *attends* cerebral function, is "concomitant" with activity of cerebral tissue. Beyond that we cannot go. We cannot say how a material thing, tissue function, is transmuted or gives rise to an immaterial thing, mental function.

Thus, speaking of "the relation of consciousness to nervous states" (i.e. physical states), Jackson said(3) :

The doctrine I hold is : first, that states of consciousness (or, synonymously, states of mind) are utterly different from nervous states ; second, that the two things occur together—that for every mental state there is a correlative nervous state ; third, that, although the two things occur in parallelism, there is no interference of one with the other. This may be called the doctrine of Concomitance.

Again he said(4) :

We cannot understand how any conceivable arrangement of any sort of matter can give us mental states of any kind. . . . I do not trouble myself about the mode of connection between mind and matter. It is enough to assume a parallelism. That along with excitations or discharges of nervous arrangements in the cerebrum, mental states occur, I, of course, admit ; but how this is I do not inquire ; indeed, so far as clinical medicine is concerned, I do not care.

Sherrington(5) concurred in this view.

We return to the aphasic who cannot say "No" when asked to, yet says it spontaneously. Saying "No" or any other word, indeed performing any act, is a response to a stimulus. The stimulus is the situation that evokes the response. We must consider the response as part of a totality that in-

cludes the antecedent stimulus. Since no two situations are exactly alike, there is no limit to the number of neuronal patterns (engrams) for the saying of "No." These engrams, to be sure, all converge upon a final common path, but before they do so they differ in the position they occupy in the hierarchy of levels.

The engrams for the voluntary "No" are on a higher level than those for the spontaneous or automatic "No." Voluntary function is more complex than automatic function. When a man says "No" because you have asked him to, his response is a calculated act. By contrast, when he shouts "No" because his child is too close to the fire, his response is automatic; he speaks "without thinking"; the word comes to his lips automatically.

In motor aphasia there is disturbance of higher pathways, but little if any of lower pathways. Voluntary function is lost while automatic function is preserved. This is what Jackson called "reduction to a more automatic condition."

There is no circumscribed center for will. Will cannot be considered apart from the thing that is willed. When the aphasic tries unsuccessfully to say "No" on command, will is a mental function concomitant with activity of certain engrams, those engrams that represent the situations that can no longer rouse the No-saying mechanism.

Jackson had the useful habit of studying a physiological principle as it manifests itself in a wide variety of clinical disorders. I will give two further examples of loss of voluntary function with preservation of automatic, one of them being less complex than speech, the other more complex.

Hysterical astasia-abasia is the less complex example. Here the patient cannot walk when you ask him to, or when he "wants" to, but under emotional stress, as when the building is on fire, he walks and runs without let or hindrance.

The more complex example is seen in toxic delirium, when the patient, being disoriented, cannot name your vocation on command, yet spontaneously he addresses you as "Doctor" (6). (This phenomenon is not elicitable in every case, nor every moment in the same case.) In many cases I have made the following experiment. The

delirious patient addresses me as "Doctor." A moment later I ask him what my occupation is, and he replies that he does not know or else, not knowing that he doesn't know, he answers incorrectly. We then continue our conversation until the next time he addresses me as "Doctor," whereupon I again ask him the question and again he fails. This can occur many times in a single interview.

In several striking instances the patient addressed me as Doctor in the very sentence in which he confessed his ignorance. Thus, one patient, when asked what my work is, replied, "I wouldn't know, Doctor—is it painting and decorating?"

This phenomenon in delirium parallels the aphasic's difficulty with "No." To say "No" on command is a highly voluntary act. So also is the patient's reply to the question "What is my occupation?" Answering this question is a studied and calculated act. By contrast, when the aphasic shouts "No" under emotional stress, or when the delirious man spontaneously and unwittingly greets you by saying "Good morning, Doctor," the speech is automatic; the words issue automatically.

The parallel applies also to those striking instances in which the delirious patient addresses you as Doctor in the very sentence in which he voices his ignorance of your occupation. The parallel is with the aphasic patient who utters a word spontaneously at the very moment he is confessing his inability to say it. Thus, striving to say No on command, the patient may give up in despair and cry out, "No, I can't."

This remarkable parallel between a "physical" symptom, the aphasic's inability to say something, and a "mental" symptom, the delirious man's inability to name your vocation, is further indication of the soundness of Jackson's argument that higher and lower cerebral centers obey the same laws, that they differ only quantitatively and not qualitatively.

To further understand reduction to a more automatic condition, we must consider its opposite. In some diseases it is the automatic functions that are lost. A useful contrast is between hysterical astasia-abasia and tabes dorsalis. The hysteric cannot walk on command, but can walk and run when

the house is on fire. The opposite is true of the tabetic, for he cannot walk automatically. In order to walk he must drop all else from his mind and concentrate on floor and feet, carefully noting every step. In a burning building he would be helpless. He is the victim, not of reduction to a more automatic condition, but of what we may call "loss of automatic patterns," which are lost because of lesion of lower spinal arcs. In hysteria, where the disturbance is in the highest cerebral centers, these lower arcs are intact and will go into action in response to instincts of an imperative nature.

PART II : MEMORY

The role of the limbic system in behavior has received much attention lately, thanks in great measure to the notable work of MacLean(7) and to psychological studies in man by Penfield and Scoville and their associates. Among other things it has been shown by Scoville and Milner(8) and by Penfield and Milner(9) that the hippocampus and related structures play an important role in memory, and that in bilateral lesion of the hippocampus and hippocampal gyrus there is profound loss of recent memory.

These findings are of great importance, for they show that the hippocampal areas are essential to adequate memory function. Penfield and Scoville are careful not to say that there is a "center for memory" in these areas. But Penfield makes some statements that appear misleading. Thus in his paper on "Memory Mechanisms"(10) he says :

The records of an individual's thinking lie dormant in the patterns of his temporal cortex until he activates them. . . . Whenever a normal person is paying conscious attention to something, he is simultaneously recording it in the temporal cortex of each hemisphere. Every conscious aspect of the experience seems to be included in these cortical records.

He speaks of "the memory cortex of the temporal lobes."

In his contribution to the Ciba Symposium(11), after speaking of the "ganglionic record of past experience," Penfield says :

The nervous tissue that preserves this record constitutes a functionally separable portion of

the brain since bilateral removal of the inferior mesial zone of both temporal lobes, including the hippocampal system, prevents subsequent preservation of the experience.

No one admires and respects Penfield and his work more profoundly than I do, but I submit that the passages quoted seem to suggest that the things we remember are "recorded" in the "memory cortex," that their "every conscious aspect" is recorded there, to remain in abeyance or, as it were, on file until they are needed. Nothing could be more wrong.

If, having studied maps and pictures of New York City, you remember that Manhattan is a long narrow island lying North and South, with a cluster of skyscrapers at the lower tip and another cluster near a large rectangular park in the middle, surely the seat of this memory is not the hippocampus. Or, to suppose a chess expert who is memorizing a game while playing it, it would be amazing if so elaborate a performance were mediated by so ancient and primitive a structure. The hippocampus dates back to the dawn of the forebrain and is scarcely more highly developed in man than in lower forms. To visualize and remember an elaborate spatial system must call into play a network of complex neuronal circuits in the new cortex, not the old. Moreover these circuits, or engrams, are not contained within a relatively small area of neocortex, such as the visual area, but are spread out so as to involve motor areas as well, for visual imagery involves motor as well as sensory function(12).

Just as there is no circumscribed center for will, and will cannot be considered apart from the thing that is willed, so it is with memory. Memory is an abstraction, and there is no center for it. Memory cannot be considered apart from the thing that is remembered. If you remember having played tennis yesterday, this act of memory is made possible by activation of engrams having to do with certain movements. If you remember having attended a concert the night before, there is activation of engrams correlative with auditory and visual images.

This is not to deny the evidence adduced by Penfield, Scoville and others, showing

that the limbic system plays a role in memory. But we cannot say what the role is. We can only say that the limbic system somehow facilitates the activation of neo-cortical circuits concomitant with images and movements. Perhaps the role of the limbic system is like that of janitors and maintenance men in a university. These men heat the buildings and make them habitable, and without them the work of the university would come to a halt. But the university is not centered in them. The essence of the university is in the professors and scientists who work there.

It is a manifestation of the wisdom of Nature that she has placed the memory facilitator in the old rather than the new brain. She has put first things first, for it is more important to remember the things we learn with our old cortex. As MacLean has shown(13), the limbic system mediates behavior that insures survival, behavior concerned with feeding, self-protection and propagation. A medical student must remember that the saphenous vein lies in a certain part of the leg, but he wouldn't die if he forgot it. But it is a vital necessity for a growing pup to remember that cats have claws.

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COMMUNITY PLANNING AS A SUPPORT TO TREATMENT¹

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During World War II, the concept of limited service based on differential diagnosis eventually supplanted the early Selective Service criteria which resulted in a staggering N-P rejection rate. Psychiatric-combat first aid and the neuropsychiatric reconditioning facility replaced early hospitalization in closed wards. Finally mental hygiene units in all installations and echelons moved psychiatry out of the protective confines of the mental hospital.

The similarity with civilian problems of today is striking. As during the War, a relative handful of trained specialists inundated with an insurmountable quantitative problem, are not permitting themselves the luxury of pre-occupation with scientific problems that provide the comfort of isolation or contemplation. Although they recognize the need for basic research they have not permitted its scarcity nor the lack of sufficient genetic understanding to keep them from moving into the arena of community mental health and applying empirical knowledge to the prevention and treatment of mental disorder. For practical reasons, and in response to pressures similar to those of war-time, a variety of clinical psychiatric services are mushrooming outside the mental hospital: open hospitals with their adjuncts "day" and "night" hospitals, sheltered workshops, "half-way houses," the mental health center, mental aid fellowship groups, etc.

These practical approaches appear to have had some impact on our problems despite the increasing shortages of personnel. The statistical picture of the resident population of mental hospitals throughout the country bears witness to this fact. A few years ago forecasts of increasing needs for inpatient facilities differed only in the estimate of how many additional beds would be required. In 1956,

however, continuing increases came to at least a temporary halt. Figures for that year showed a decrease of 7,000 in the patient population. The decrease continued by another 3,000 in 1957, and preliminary figures indicate a decrease of 7,000 more in 1958³. The really striking evidence that these decreases result from the new programs cited above, however, is the fact that the decrease in patient population has been accompanied by continued high admission rates. More patients are being admitted but as a result of the practical efforts of practical men they are no longer increasing our hospital populations.

Many more patients than ever before are leaving our mental hospitals to return to their communities—perhaps a quarter of a million a year. It is the purpose of this paper to note and to re-affirm some of the responsibilities which go hand in hand with these clinical successes. We assume that the majority of these patients leaving the hospital have achieved a degree of clinical recovery that warrants planning for some form of extramural living. It has been suggested that failure to act on early conditional release of patients will lead to chronicity, hospitalism, and continued inpatient treatment. The decision to release patients from the hospital, therefore, demands a carefully balanced consideration of the desire to avoid chronicity and the likelihood of the patient's success in extramural living. The former is largely a hospital responsibility, and the latter largely that of the community.

Historically, especially since the public clamor of the 1870's, the spotlight has been on admission procedures. The heavy emphasis of community pressure has been to safeguard individual civil rights and originated in the development of more humane treatment of persons suffering mental illness who were moving through social institutions, e.g. almshouses, to our hospitals. Too little has systematically been done as far as release procedures are con-

³ Council of State Governments, Sidney Spector, Director, Interstate Clearing House.

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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ceived. Periodically, there is tabor in the Press concerning acts committed by ex-patients, or more recently there is a startle reaction in the general public's discovery that they are living with an "open hospital" in their midst. Generally speaking, however, hospital administrations are sorely pressed by ever increasing admissions, shortages of trained personnel, the management problems of aging buildings and equipment, the perpetual fiscal problems, and the other all too familiar details. The allocation of sufficient time and thought, not only to release procedures but to the overall community planning necessary to meet the demands of the patients returning to extramural living, rarely receives a high priority.

A major obstacle to planning for adequate community services is the question of who is going to pay the bill. Despite tremendously increased appropriations of public tax funds, we still find ourselves administering programs which do not enable us to utilize our professional knowledge to the fullest extent. Realistically we simply cannot expect indefinitely continued budget increases to expand our programs, even if training facilities were turning out the skilled manpower necessary for such expansion. Our only alternative, therefore, is to make maximum use of our current resources and to find new ways of realigning them in the light of our understanding of the needs of our patient population.

This suggestion is not offered as being either new or revolutionary. In relation to the problem of aging it has been said, "If basic community services were improved then psychiatric clinics would be really utilized as such" (1). In another study it appeared that 4 out of 5 patients treated in a child guidance clinic over a period of 25 years might have as appropriately been treated in non-psychiatric agencies (2). A study of psychiatric clinics in New York City some years ago was subtitled, "A Study Toward the Prevention of Waste" (3). These three by no means unique observations cover the entire range of psychiatric patients and all point to the need of a closer rapprochement with community resources.

"Community resources" is a tidy concept which covers a wide range and variety of efforts. The very tidiness with which it is articulated belies its complexity, its essence, and the creativity inherent in the utilization of its possibilities. Webster gives us clues in the literal definition—a *resource* is a new or reserve source of support, a means of resort in exigency, or a stratagem; a *community* can be society at large, the public or people in general, and in a more restricted sense, it is the people of a particular place or region. This frame of reference excludes the stereotype and places a heavy burden of responsibility on any professional at any level of operation who seeks to identify and employ "community resources" in his endeavors.

For our present considerations we will not plan to emphasize the mental hospital "community." Rather we will here point up examples wherein exploratory efforts in "society at large" may lead to more constructive sources of support to patients who have improved to the extent that they should be encouraged to deal with increased reality demands.

This approach is admittedly artificial because the mental hospital itself should be truly a community resource. Proper planning for the discharge of a patient from the hospital and his adequate convalescent care is best started at the time of his admission (4). This, of course, is primarily a clinical responsibility as it relates to the individual patient. We are here more concerned with the type of broad planning and policy making that involves organized Federal, interstate, state, or local activity. Any or all of these may have an impact on clinical treatment. It is the responsibility of the psychiatrist both as a clinician and as a citizen to identify and take advantage of the community resources that do exist, and to make known the needs for hitherto non-existent community resources that might be desirable or even essential for adequate treatment of patients. When these new resources can be provided only by organized community effort it is further the responsibility of the psychiatrist to provide the leadership that will ensure their establishment in accordance with the best professional knowledge and practice.

An example of the kind of planning that must be done at the Federal level is in the area of Public Assistance. Many a psychiatrist has found himself in the following dilemma: A patient has shown considerable improvement, and in the best clinical judgment the next step in treatment calls for a living arrangement in the community. The patient is without economic resources and requires economic subsidy. The Federal Handbook of Public Assistance Administration indicates that "a patient on conditional release from a public mental hospital where he was an inmate—is not an inmate of a public institution if he is free of controls by the hospital, other than professional help or guidance relating to his mental condition." This theoretically would make him eligible for Public Assistance. Nevertheless, in many states the procedure is such that the patient who requires aftercare supportive treatment will be discharged prematurely to become eligible for public assistance. The alternatives in most instances are retaining the patient for continued hospitalization, or discharging him and hoping that relapse and re-admission will not occur. Ideally, one would like the reality planning to provide for continued outpatient treatment with the public assistance participation as an integral part of the plan. Too frequently this is not possible. Where it is possible, the timing factors so important in the release of patients, become so complicated by the administrative procedure that the optimum point at which release should take place cannot be adequately considered.

Much of this maze of planning stems from the original exclusion of "any individual (a) who is a patient in an institution for tuberculosis or mental diseases or (b) who has been diagnosed as having tuberculosis or psychosis and is a patient in a medical institution as a result thereof."⁴ The language of this aspect of the law lends itself to detailed analysis, interpretation, judicial conjecture, and heated argument. We needn't here point out that "psychosis" is not a synonym for "mental illness."

Psychiatrists working in state programs

are acutely aware of these ramifications. At the recent annual conference of the State and Territorial Mental Health Authorities with the Surgeon General of the Public Health Service, the following recommendations were passed:

That the Secretary of Health, Education and Welfare propose to the Congress legislation to amend existing Social Security Laws so that they do not discriminate against persons with any type of illness mental or physical.

This resolution is the result of individual psychiatrists moving from official positions. By the nature of this particular conference, the American Psychiatric Association as such was not a participant although its Medical Director was present as an invited guest. There is, however, an important and valid role for an Association such as the APA to play in the area of Federal legislation. An Advisory Council of Public Assistance, established by law, is reviewing aspects of the Federal Public Assistance Program. This group is required to report by January 1, 1960 on needed changes in the Social Security Act. Its 12 eminently qualified members do not include a psychiatrist. However, official liaison from this organization would offer ample opportunity to present to the Council the problem of the mental patient.

The possibility of participating in planning on the national level by a national professional "community" such as the APA, can be extended to include many other activities. For example, the Children's Bureau, which lacks a psychiatrist on its staff, notes little information regarding the need for psychiatric services for children. Yet state mental hospitals are regularly used as a resource for children(5).

Certain kinds of problems require planning among the states independent of participation by the Federal government: for example, planning for a mentally ill resident of one state who finds himself somewhere else in the country, or the establishment of regional educational services to provide more personnel in scarce categories. In various ways states have come together for inter-state community planning—the Southern Regional Education Board, the Western Interstate Commission on Higher Education, and the Northeast

⁴ This statement appears repeatedly in the "Definition" portion of various "Titles" of the Social Security Laws.

State Governments Conference on Mental Health. Meetings of these groups provide striking illustrations of the varieties of programs designed to solve basically similar problems.

Tangible evidence of the real potentialities for successful planning of such a group as the Northeast State Governments Conference on Mental Health is to be found in the remarkable legal document known as the Interstate Compact on Mental Health (6) which was conceived and born in this Conference. Extremely difficult legislative and administrative problems, at times thought to be insoluble, were transcended to forge an instrument which has added a great deal for the clinician considering the best interests and welfare of his patient. It is now possible in those states which are signators of the Compact to plan for a patient on the basis of his medical needs rather than on the basis of a legalistic concept of place of residence or settlement.

At the level of the state "community," the problems of planning are compounded. Federal legislation is drawn along broad lines and in accordance with broad general principles to allow for the translation to meet the needs of individual states. Interstate planning too is limited to special circumstances and is framed in general terms. State planning, however, has to deal with the details of program activities in the specific requirements of the individual state.

It is estimated that in 1957 the total operating expenditures for patients in state mental hospitals reached \$732.2 million. This represents an increase of 130% in expenditure in 10 years. During this period hospital populations increased by 13.4% and first admissions by 23.7%; discharges increased by 85% but re-admissions increased 100%! State community mental health services from 1952 to fiscal 1957-58 increased from \$5.9 million to approximately \$27 million(7). These are rough figures introduced only to give some gross factors which need to be taken into account in state planning. The most valid trend these complicated data reveal is the increased movement of the patient population to and from state hospitals and the recently increased expenditure for "community services."

State responsibility has been with few exceptions affixed by practice, to inpatient care. That is, the objective of state hospital programs and hospital administrators has largely been the care of the patient to the point of clinical improvement where he could return to the community. In this context, return to the "community" might include "direct discharge," return to court, prison or jail, discharge against medical advice, unauthorized absence, voluntary separation, or some manner of conditional release. Where hospitals have had clinical services in the community, they were usually available for a percentage of "convalescent status" or "extended visit" patients who remained "on the books." The movement into community mental health services by state government is beginning to change this orientation.

The stimulus of the National Mental Health Act did a great deal to break down the planning isolation of state departments in the mental illness field. Committees and Commissions were developed. Commissioners of Mental Health met with their opposite numbers in Health, Education, Welfare, Corrections, Labor, Finance and others to plan for services in the community. Mutual and related problems have been brought into a common forum. The mental hospital patient in this group is seen in his social context rather than in an acute phase of his illness. The essential problem of relating these to-be-defined services to local voluntary and municipal agencies began to come under discussion. Simultaneously the "open" hospital, long dormant in this country, was given impetus. We are also, with less fanfare, beginning to see an increase in the utilization of the voluntary commitment. It has been said that the "open door" is really the prelude to the "revolving door."

Further planning in fields other than those specifically identified as mental health, needs the guidance and assistance of psychiatrists at the state level. Research under essentially psychiatric auspices has been largely responsible for demonstrating the potential evils of many long-established practices in the care of orphaned infants. Adequate planning of our state child welfare programs in the area of adoption and

foster home practices should have the benefit of psychiatric guidance. These are activities in community planning of major importance to our society as a whole.

Planning is now actively under way for the 1960 White House Conference on Children and Youth. Nationally there are psychiatrists involved in the planning and direction of the conference. The organized psychiatric community at the state level, district branches of the American Psychiatric Association for example, should be active participants in the state's planning for this Conference.

At the local community level there is evidence that efforts⁽⁸⁾ of mental health education are beginning to take root. We see this in the interest of local communities and agencies who are approaching our hospitals asking for opportunities to participate in planning for patients who are returning. These approaches are from organized groups such as Councils of social agencies who have an awareness of the problems and are expressing some degree of responsibility for them. We hear reports of programs utilizing public health nurses (Ga., Ky.), County Health Departments (Fla.), and County Welfare Departments (Kan.). There are also continuing efforts⁹ to involve the general medical practitioner in various phases of aftercare. The impetus of the Office of Vocational Rehabilitation is beginning to be felt and the Hospital and Community Services Branch of NIMH has also stimulated activity. The various community mental health acts in states have emphasized state-local fiscal participation usually under defined public and voluntary auspices. These resources have undoubtedly resulted in an increase of facilities, so that more service is available to more people. Perhaps it is too soon to inquire or perhaps it is too audacious a question, but we can't help wondering to what extent these services are related to community problems. We are suggesting that the heavy emphasis has been on matters pertaining to organization, e.g. financing, personnel, and not sufficient emphasis has been given to planning.

SUMMARY

To recapitulate, the necessity for adequate planning is justified not only by current scientific knowledge that indicates its validity, but also by the practical necessity for making the most efficient use of any and all available resources.

When we total our current scientific knowledge we hear that "much of the disability in mental illness is superimposed by social and treatment mechanisms and is preventable and reversible"⁽⁹⁾. A review of financing (tax funds supply probably 90% of the budgets for services) tells us that "discussion focuses on assertions that the states have reached their taxing limits"⁽¹⁰⁾. When we examine our personnel picture and the training and recruitment prospects⁽¹¹⁾ we find that it will take all our ingenuity to stand still. These are sobering and responsibly drawn conclusions. They indicate that we cannot expect more of what we have, without limit. We cannot assume that our currently uncoordinated efforts are making maximum use of existing facilities. We must continue to discover and make creative use of related facilities which can contribute to the solutions of our problems.

This assumes that we have defined our problems in both qualitative and quantitative terms; that we have an appreciation of our resources and that the means of communication exists to consider getting the two together⁽¹²⁾. This is a large assumption. Nevertheless it is the only base on which planning can define and consider the issues. The alternative is to continue our buckshot approach of more of the same, in the hope that if some is good, a lot is better.

Planning can start with the individual practitioner out of whatever professional discipline he represents. He is in a position to appreciate the needs evidenced in the individual case. Through his relationship with his colleagues in membership organizations or through hospital and agency structures these individual needs become cumulative and are communicated. (We have herein noted how this chain reaction can move from the National scene to the clinical decision.) As the needs of individuals become clear it is possible to design

⁹ Through the Ad Hoc Committee on General Practice of the APA in Cooperation with the American Academy of General Practice

and implement services to meet these needs. From private practice case planning up the line to broad program planning, reality factors must be identified and met. The reality variables may well be decisive in determining whether or not our technical skills will have an opportunity to deal with personality pathology or its manifestations!

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HIGH DOSAGE CHLORPROMAZINE THERAPY IN ACUTE AND CHRONIC SCHIZOPHRENIA

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In a number of "double-blind" studies in chlorpromazine, reviewed by Freeman (1) it was found that the efficacy of tranquilisers like reserpine and chlorpromazine in the treatment of acute and chronic schizophrenia cannot be doubted. Pioneer trials were described by Kinross-Wright (2), D. Goldman (3), and A. A. Kurland (4), and the results of these authorities were confirmed as most satisfactory.

In Freeman's review (1) three dosage schedules are discussed: Low (150-400 mgs. chlorpromazine daily); Moderate (500-900); High (1000 and over daily).

In the last, Kinross-Wright's intensive treatment in rapidly increasing doses (up to 4,800 mgs. daily for 8 to 10 days), is especially relevant to the working out of the method, described below. In his review, Freeman thinks that the results are equally good in all 3 levels but that the figures for chronic schizophrenics are showing a significant increase of successes in the high dosage column.

A. A. Kurland (5) studied the response of 400 cases of schizophrenics to chlorpromazine and reserpine and concluded that chlorpromazine is the superior drug. This, too, was amply confirmed.

Of vital interest for the development of the method called in this trial Intensive Chlorpromazine Therapy was the paper of M. W. Foster and R. S. Gayle, read at the 49th annual meeting of the Southern Medical Association Section for Neurology and Psychiatry in November, 1955, and the consequent discussion of this paper (6). Here it was reported and strongly supported by Ayd (6) that a combined therapy of chlorpromazine and electroshock therapy achieved quick and very good results and that the dangers thought to be great in this combination are, in fact, minimal and easily avoidable, especially if chlorpromazine is not given directly before treatment.

In searching for the optimum therapy in schizophrenia, it follows from the above references that chlorpromazine was preferable to reserpine, that a moderate to high dosage technique had advantages over the low dose and that it was desirable to combine ECT with medication. Thus it was found advisable to:

1. Try to find an optimal dosage of chlorpromazine. The differentiation of dosage for acute and chronic schizophrenics was considered irrelevant. Whatever damage the disease process does in a prolonged course, can have little or no bearing on the disease process *per se*, and the thorough suppression of the disease by forcing an early and lasting remission is of great importance. The combination of chlorpromazine and ECT was thought to be a powerful agent. In a number of single trials ranging from 800 to 3000 mgs. daily, 2100 mgs. daily was found to be optimal as a peak dosage.

2. Try to find an optimal time limit. Maintaining in single trials patients on the peak dosage, varying from one day to one month, it was found that too short a period was not giving lasting benefit, delaying in fact the remission, or being followed by rapid relapses, whereas continuation for too long a period did not alter the picture either in success or failure but made epileptic and pseudo-Parkinsonian side effects very prominent without helping in the process of forcing or maintaining a remission, nor in fact did it seemingly break up psychotic features in the very malignant forms of schizophrenia. Ultimately, a skeleton scheme of the intensive chlorpromazine therapy was evolved (Table 1).

A quick permeation with chlorpromazine parenterally is achieved and accompanied by 3 electroconvulsions, modified by Penthotal and Brevital. The second step is a daily increase of chlorpromazine by 100 mgs. t.d.s. to the peak dose of 700 mgs. t.d.s., which is held for one week. The dosage is then decreased by 100 mgs. t.d.s. until a level of 300 mgs. t.d.s. is

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TABLE I

BASIC OUTLINE OF INTENSIVE CHLORPROMAZINE THERAPY

		Chlorpromazine mgs. 50, Intramuscular, or orally t.d.s. mgs. 100, Intravenously statim followed by 50 mgs. Intramuscularly, t.d.s. according to severity of symptoms for 1-4 days until oral therapy possible.			
	1st day				
1st ECT	2nd to 4th day				Chlorpromazine mgs. 100 t.d.s. (tabs.) for 2 to 4 days
2nd ECT	4th to 6th day		200		for 2 to 4 days.
3rd ECT	6th to 8th day		300	(Syrup)	for 2 to 4 days
	9th day		400		for 1 day
	10th day		500		for 1 day.
	11th day		600		for 1 day.
	12th to 19th day		700		for 7 days.
	20th day		600		for 1 day.
	21st day		500		for 1 day.
	22nd day		400		for 1 day.
4th ECT	23rd day		300		for 1 day or beginning of maintenance level.
5th ECT	24th day		200	(tabs.)	usual maintenance level for varying times, sometimes permanent.
6th ECT	25th to 35th day		100		maintenance dose in favourable cases.
			50		after discharge indefinitely.

reached and 3 further modified electro-shocks are given.

This is not a rigid scheme and it is guided by the response of the patient and the severity of the side effects. These side effects rarely occur during the period of the build-up of the therapy but if they happen during the peak period the manipulation of the situation leads to an earlier beginning of the descending limb of the therapy.

METHOD

All female first admissions, diagnosed as schizophrenics, most of the female cases admitted and diagnosed as recurrent schizophrenics, a number of male first and recurrent admissions and chronic patients in the male ward and chronic cases from two female wards, under the care of the writer, were chosen. There was no selection, but in the long stay wards the age of the patients was restricted mainly to 20-50 years.

All first and recurrent female admissions were, in the vast majority, in the personal

care of the writer from January 1957 until September 1958 and the 143 patients, 93 females and 50 males, were divided into Groups A, B and C, first, recurrent and chronic hospitalized cases respectively (Table 2).

There were 37 first admissions against 106 recurrent and chronic hospitalised schizophrenics: thus a loading with acute illnesses which usually respond to treatment, is avoided (Table 2).

An assessment of the type of schizophrenia has been made, but it was found that only in rare cases was this classical enough to categorise in one diagnostic pattern (Table 3).

In the recurrent Group B and the chronic Group C, all previous treatments, as far as they are recorded in the old case notes, were noted and are summarised in Table 4.

Assessment of the condition of the majority of patients was made by the writer, the remainder by his colleagues. A first regular assessment was made after the patient was stabilized on his maintenance dose, usually

TABLE 2
NUMBER OF CASES AND GROUPING

	Female	Male	Total
a Number of first acute schizophrenic episodes	30	7	37
b Number of acute schizophrenic breakdowns after previous remissions	28	22	50
c Number of chronic hospitalised schizophrenics (over two years)	35	21	56
	93	50	143

TABLE 3
A ROUGH DIAGNOSTIC SUB-CLASSIFICATION

	Group A	Group B	Group C	Total
a Catatonic Schizophrenia	4	2	7	13
b Paranoid Schizophrenia	3	13	17	33
c Hebephrenic Schizophrenia	15	28	12	55
d Simplex Schizophrenia	5	4	5	14
a + b	1	2	2	5
a + c	5	1	3	9
a + b + c	2	2	7	11
d	2	—	3	5
	37	50	56	143

TABLE 4
TREATMENTS PREVIOUS TO INTENSIVE CHLORPROMAZINE THERAPY

*Previous to Intensive Chlorpromazine Group B and C.
Number of patients treated.*

ECT Straight, Modified or Cardiazol	86
Deep Insulin Coma Treatment	37
Modified Insulin Treatment	20
Small doses of Chlorpromazine or Serpasil	32
Prefrontal Leucotomies	10

TABLE 5

STANDARDS OF ASSESSMENT

- I = Recovered
II = Good Improvement
III = Mild Improvement
IV = Minimal Improvement
V = No Improvement

Full social and individual rehabilitation on the premorbid level of personality integration.
Full social integration but less than the premorbid level.
Full social rehabilitation but still showing elements of former schizophrenic illness.
Arrest of overt psychotic behaviour, ability to be maintained in a sympathetic environment out of Hospital or upgrading inside the Hospital; works, dresses, feeds without supervision, psychiatric supervision necessary on Out or In-Patient basis.
Continuation of the schizophrenic disease process with no break-up of psychotic behaviour or any signs of a remission.

after his sixth modified ECT. A firm assessment, of course, was made prior to discharge. Followup was carried out by the writer and his colleagues in all outpatient clinics of the area, and for the more recent admissions, regular followups in this hospital had been arranged by the writer after the discharge of the patients, at monthly intervals (Table 5).

Clinical details of the intensive therapy are of some importance. The patient is usually in bed for the first 2 to 4 days to acclimatize to ward conditions and he is encouraged to be up and about until his ninth day. From the ninth to the twenty-third day he is in bed again because of drowsiness, orthostatic disturbances, epileptic manifestations and occasional confusional states. Severe pseudo-Parkinsonian symptoms such as drooling, speech difficulties, marked limb rigidity with "cogwheel" neuromuscular response to passive movement, myoclonic jerks, epileptic fits, gross malaise with feelings of severe weakness may often make one choose a shorter time or a lower dosage level of the 7 day peak period. Food and liquid intake, bowel and bladder action, are attended to and special care of the heart and lungs is given. A full blood count is taken if any mouth or throat pathology is observed. The activities of patients in bed, like reading, knitting, drawing, conversation with nurses are encouraged but drowsiness in most cases prevents these activities.

After the period of maintenance, not later than 10 days after the last ECT, an assessment is tried to fix the maintenance level which varies from 50 to 300 mgs. t.d.s. It usually depends on the degree of remission. It is, to judge from the experiences of the last 21 months, of primary importance not to be too quick to reduce chlorpromazine or to cut it off altogether by misjudging success, or failure, too early; especially in chronic schizophrenics the rigid maintenance of quite high levels of chlorpromazine, even up to 400 mgs. t.d.s. is part and parcel of the intensive chlorpromazine therapy.

The results of this trial are given in Table 6 and the administrative outcome is assessed in Table 7 together with the fate of 16 relapses.

Side effects are tabulated in Table 8.

DISCUSSION

1. The combination of intensive chlorpromazine therapy and ECT has been thought dangerous by some authorities. Freeman(1) mentions a number of serious complications and deaths and states that this method should be used with great caution. Goldman(7) feels that chlorpromazine is no contra-indication to ECT, criticizing the authors for not stating their methods of giving ECT, but he maintains that no muscle relaxants should be given. In our experience, there is no danger or contra-indication in either the combination or the giving of muscle relaxants. In this trial a minimum of 900 electroshocks have been given to patients before and after the peak period, usually at the level of 900 mgs. per day chlorpromazine, and in no case was there an difficulty in the recovery. The standard method used was as follows:

Pre-medication with atropine, half-an-hour before treatment, no meals 3 hours before treatment, bladder and bowel emptied before treatment, 3-5 cc. of 5% solution of Thiopentone, 0.5-1 cc. Brevdil, the last two given through the same needle but in two syringes, oxygenation of the patient until full relaxant effect has been observed, shock, oxygenation at the tail-end of clonic phase of convulsion until full breathing established.

The only observation during these treatments was the marked prolongation of the clonic phase when ECT was given following the peak period. This is also seen after deep insulin coma treatment and is not considered relevant.

2. During the single trials to estimate optimal dosage, epileptic fits of classical grand mal character were observed regularly in dosages over 2100 mgs. per day. In 3 cases of failure after the peak period, using the above method, treatment was recommenced by raising the dosage to 3000 mgs. per day, and all 3 cases had fits. However, a further 17 epileptic fits occurred during the 2100 mgs. per day level. In these cases, 7½ grs. sodium amytal were given intramuscularly and the descending limb of the therapy began irrespective of the length of time of the peak period maintained. As in deep insulin coma treatment,

their occurrence should not lead to disruption of the therapy.

3. The confusional state reported in 15% of all patients occurs usually near or during the peak period. It is often quite out of tune with the underlying psychosis, in fact, it is a superimposed toxic psychosis. In most cases there is gross restlessness, over-activity, over-talkativeness, speech is found to be incoherent and the contents have little bearing on the pre-existent primary delusions; in some cases gross euphoria and episodes of manic character were observed. Here the danger consists in diagnosing a relapse and breaking up the therapy. It was found in all cases that sedation with sodium amytal, again given intramuscularly, with a dosage of 7% grs. alleviated this state and was given concomitantly with the chlorpromazine therapy.

4. Jaundice and agranulocytosis were constantly watched for, but did not appear in

any of the 143 patients. Three cases, 2 females and 1 male, had mild jaundice previous to intensive chlorpromazine therapy when on small doses of the drug.

5. Two chronic deteriorated schizophrenics committed suicide after lengthy periods of maintenance dosage. Their suicides were not thought to be related to the action of chlorpromazine, but they must, naturally, be regarded as therapeutic failures.

In view of the fact that side effects with chlorpromazine are encountered regularly, the method described above is not blind. It follows, therefore, that the observations made are subjective ones, but the following points emerge:

1. Intensive chlorpromazine therapy is a useful method of forcing a remission in primary schizophrenic episodes. It works at least as well as other methods of treatment in primary schizophrenia, with the exception of simple schizophrenia and the few

TABLE 6

RESULTS OF 143 PATIENTS AFTER INTENSIVE CHLORPROMAZINE THERAPY

	<i>Acute First Schizophrenic Episode</i>				<i>Acute Schizophrenic Breakdown after Previous Remission</i>				<i>Chronic Hospitalised Schizophrenics</i>				<i>Totals</i>	
	<i>Fem. %</i>		<i>Male %</i>		<i>Fem. %</i>		<i>Male %</i>		<i>Fem. %</i>		<i>Male %</i>			<i>n</i>
I (Recovered)	14	38	1	3	7	14	2	4	-	-	-	-	24	17
II (Good Improvement)	10	27	3	8	11	22	10	20	4	7	2	3.5	40	28
III (Mild Improvement)	4	10	3	8	9	18	9	18	15	26	6	10.5	46	32
IV (Minimal Improvement)	1	3	-	-	1	2	-	-	12	21	11	20	25	17
V (No Improvement)	1	3	-	-	-	-	-	-	3	6	2	3.5	6)	6
VI (Suicides)	-	-	-	-	-	-	1	-	1	2	-	2.5	2)	-
	30	7			28	22			35	21			143	

TABLE 7

ADMINISTRATIVE OUTCOME

	<i>Relapses</i>	<i>Discharges in this Hospital Transfer or readmission to other Hospital</i>	
		<i>Discharge</i>	<i>Remain</i>
Out of 37 (Group A) First Admissions		35 (94%)	2 (6%)
Out of 50 (Group B) Recurrent Admissions		44 (88%)	6 (12%)
Out of 56 (Group C) Chronic Hospitalised Patients		20 (35%)	34 (65%)
		<i>Re-Discharged</i>	<i>Still Remain (inc. in the above 'REMAIN' Column)</i>
GROUP A	3	1	2
GROUP B	8	5	3
GROUP C	5	2	3
	<u>16</u>	<u>8</u>	<u>8</u>

cases of extraordinary malignant catatonic schizophrenia who relentlessly deteriorate in spite of all known treatments; 4 out of the 6 patients, 2 males and 2 females, belong to the latter, the remaining 2 were diagnosed as schizophrenia simplex. Severe longstanding paranoid schizophrenics, even if admitted to hospital for the first time or after long intervals, have been found to need very prolonged treatment on high maintenance levels up to 400 mgs. t.d.s. for as long as 6 to 12 months.

2. Intensive chlorpromazine therapy seems to have the same positive effect with recurrent cases, Group B. The relapse rate in this group was higher than in the other groups, as one would expect for both medical and social reasons; 8 relapses out of 50 patients, respectively out of 44 discharges, were recorded, but a repeat course of intensive chlorpromazine therapy was given in all these cases with equally good

results, that is, 5 have been re-discharged after the second course.

3. Less spectacular in numbers, but of perhaps the greatest importance, are the results in the treatment of chronic hospitalised schizophrenics. If a discharge rate of 35% could be reached on a national level it would certainly relieve the pressure on our mental hospitals considerably. One must understand clearly, however, that in the rehabilitation of chronic schizophrenics, and this is probably equally true for primary and recurrent patients, modern hospital conditions with maximal freedom, occupation, enlightened nursing, maintenance of the patients' social relations, play a preponderant part. This is obviously difficult to assess but may be of greater significance than even the best medication.

4. In one patient of Group A, intensive chlorpromazine therapy did not force a full remission and although maintained on

TABLE 8

SIDE EFFECTS

<i>Side Effects</i>	<i>Females</i>	<i>Males</i>	<i>Total</i>	<i>Percentage</i>	<i>Special Medication Given</i>
Drowsiness	85	41	126	88	—
Pseudo-Parkinsonism	51	21	72	51	Reduction at maintenance level only.
Skin reaction—Oedema, Sweating, Flushing	28	3	31	21	Cortisone Cream when severe.
Epileptic Fits, myoclonic jerks	16	4	20	14	Nivaquine 200 mgs. b.d.
Menstrual disturbances in relevant age	34	—	34	36% of all females	7½ grs. Sodium Amytal Intramuscularly.
Hirsuties	1	—	1		In one case, a false positive Freedman test was seen.
Pseudo-lactation	2	—	2		
Confusional State	13	9	22	15	
Pyrexia	7	5	12	8	*7½ grs. Sodium Amytal Intramuscularly.
Epistaxis	—	1	1		As usually concomitant with hypostatic pneumonia—Penicillin given in usual dosage—Chlorpromazine reduced pro tem.
Obesity	41	8	49	34	Reduction of dosage temporarily.
Skin reaction—sun irritation	37	15	52	36	—
Jaundice					Nivaquine 200 mgs. b.d. Anthi-
Agranulocytosis					san Cream—Sun hats when up and about.

chlorpromazine 300 mgs. per day, it was felt that the patient was relapsing. At that point, deep insulin coma therapy was given and a good remission was forced with 38 comas. She has been maintained since then, for over a year now, on chlorpromazine mgs. 150 per day and has not relapsed and was assessed when last seen as an out-patient, as maintaining her good improvement. From a comparison of recurrent and chronic patients who had leucotomies, and those who had deep insulin coma treatment, it became clear that all cases leucotomised responded indifferently to intensive chlorpromazine therapy, whereas a response to ICT after deep insulin coma therapy was significantly better. It is thus felt that deep insulin coma therapy can be adjunctive in achieving a remission.

5. It is well understood that discharge from hospital is not necessarily a good criterion of clinical change, *e.g.* some voluntary patients left hospital prematurely and against advice, whilst other long-stay patients could have been discharged if social circumstances had allowed them.

6. All in all, the response to this method of treatment surpasses the expected rate of natural remissions and it proved successful in patients who were unsuccessfully treated by other methods.

This is most forcibly expressed in considering the response to intensive chlorpromazine therapy of the long-stay chronic illness Group C. Of these 56 patients, 44 had had ECT, straight, modified or Cardiazol, 28 low dosage chlorpromazine or Serpasil, whilst 21 had received deep insulin coma treatment, 13 modified insulin treatment and 8 had prefrontal leucotomy. None had been considered well enough to be discharged. Following intensive chlorpromazine therapy, however, 20 were discharged (6 classified as Grade II, 14 as Grade III).

7. All 16 relapses were associated with failure of the patient to continue on chlorpromazine in the maintenance dose. It cannot be overstressed, that a schizophrenic in remission is not cured; rigid psychiatric supervision and upkeep of an optimal maintenance dose of chlorpromazine are part and parcel of ICT. It is felt that much more knowledge of the disease is needed

before we can allow a patient to go without a medication which we know helped him to force and maintain a remission.

SUMMARY

A method is given here where increasing doses of chlorpromazine are given to all groups of schizophrenics, reaching a peak level of 2100 mgs. per day for one week. This dosage is decreased and after assessment a maintenance level of chlorpromazine is rigidly upheld for indefinite periods. Three modified ECTs accompany the ascending limb and 3 or more modified ECTs the descending limb of chlorpromazine therapy. Side effects are multiple but none is considered dangerous or necessitating the discontinuation of the treatment, especially if all necessary precautions are taken and the patient is closely watched.

The results of this method are sufficiently encouraging to justify its continued use.

The method is not considered rigid and the level of dosage and the length of time in which higher dosage levels are given are guided, naturally, by the patient's response and the severity of the side effects. The importance of the method is felt to lie in the quick way a first remission is forced, recurring episodes and relapses reversed and chronic schizophrenic illness alleviated.

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RECOVERY FROM SEXUAL DEVIATIONS THROUGH OVERCOMING NON-SEXUAL NEUROTIC RESPONSES¹

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The treatment of sexual deviations is commonly said to be difficult and the results uncertain (1, 2). Several popular generalizations about psychotherapy may contribute to these unfavorable aspects of the treatment of these disorders. On the grounds that it takes only one white crow to prove that all crows are not black, we present 3 cases of sexual deviation in each of which a significant transformation of sexual behavior occurred with comparatively little treatment, at least as judged by the number of interviews, respectively 45, 10, and 21. From our data we shall infer that the following popular generalizations are untenable as generalizations: (a) that a requirement of recovery from a psychoneurosis (of which sexual deviations are considered one type) is the recall of repressed memories of early traumatic experiences; (b) that such recovery can only occur, or be lasting if it should occur, as a result of the uncovering and modification of specific sexual conflicts; (c) that the removal of symptoms or the alteration of outward behavior without modification of such conflicts must inevitably lead to the outbreak of other symptoms, if not the recurrence of the old.

CASE REPORTS

Case 1.—A. K. was arrested by the police on the complaint of his neighbors that he had been manipulating the genitals of little girls. One of these neighbors had tolerantly agreed and arranged that the charges would be dropped on condition that A. K. seek psychiatric treatment. He agreed to this with some misgivings.

He had been playing with the genitals of little girls regularly for 3 years, sporadically for many years. Married 10 years, he was

the father of 2 girls with whom, incidentally, he did not play sexually. His sexual relations with his wife had once been satisfactory, but had fallen off in later years. He had gradually become almost completely impotent with his wife.

Although 42 years old, A. K. continued in a most servile relationship towards his father who gave him advice and financial donations, but also scorn and derision. Towards his customers he was equally unassertive. He said of himself "I want people to like me. I can never say 'No.'" Originally he had a good relationship with his wife, but as he failed to advance in work or money, they drifted apart and she gradually became irritable and even shrewish towards him. He had gradually withdrawn from her.

Of A. K.'s early sexual history almost no information emerged. In an early interview he mentioned that when he was 5, some boys and men had given him marbles for performing fellatio on them. Other details of early sexual experiences were not pursued; first, because the patient himself had much pressure to talk about his present situation, and secondly, because theoretical considerations presented elsewhere (3, 4, 5) made it seem unlikely that they would be necessary for the patient's recovery. This inference proved correct.

A. K.'s father had at first agreed to pay for his therapy, but after the alarm of A. K.'s arrest abated he treacherously withdrew his support. A. K. wanted to leave therapy, but was detained by the fear that the district attorney would bring him to trial. So he paid for his therapy himself, 45 interviews over a year and a half.

The defection of his father when A. K. most needed him brought fully into the open his child-like attitude which had persisted toward his father. He began to remedy this state of affairs, first, by freely expressing his resentment towards his father for the latter's mistreatment of him over the years, and secondly, by completely emancipating himself from dependence on his father for money, advice or anything else. The assumption of responsibility for paying for his own treatments signalized this change, but was actually only the first of such moves.

The subsequent therapeutic interviews were largely occupied in examining and improving

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A. K.'s current relationships with other people. A. K. gradually became more assertive in such relationships. His relationships with others, including his father, improved markedly. He changed and improved his job and greatly expanded his social activities. His relationship with his wife, especially improved and he found a complete return of his potency with her. At the same time, the desire to play with little girls receded and did not return. Further descriptions of the technique of psychotherapy have been published elsewhere (3, 4, 5).

Three follow-up inquiries were made 1, 5 and 68 years after the completion of treatment. On each occasion he reported himself as having maintained his improvement, with no recurrence of his deviant sexual behavior.

Case 2.—S. E. was a 22-year-old student who referred himself for the treatment of homosexuality. He was also anxious, depressed and performing poorly in his college work. He had begun homosexual experiences at the age of 14 and continued them for the next 8 years. He also masturbated frequently. His relationships with girls had been meager and unsatisfactory, both emotionally and sexually. He had had sexual intercourse only 3 times with girls during the 8 years of his homosexual activity. At the time of coming for treatment, he had been seeing a good deal of a girl to whom he felt considerable attraction and was even vaguely contemplating marriage to her. He was held back first by the thought that he was using marriage as a possible cure for his homosexuality, and secondly, by the conclusion he had reached that he was irreversibly homosexual and unfit for marriage. Therapy seemed a last possibility before resigning himself to this fate.

No information was elicited about S. E.'s early sexual experiences. His father had died when he was 12 and his mother had remarried 2 years later. The patient's stepfather proved a tyrant who tried to control the family, including the patient, by restrictions on money. He somehow gained control over a small undistributed legacy the patient's father had left him. Instead of having a regular allowance, the patient had to go to his stepfather each time he needed money.

Only 10 interviews took place. The discussion of S. E.'s homosexuality (after the history-taking) was confined to the therapist's offering two remarks with regard to it. First, he said that he thought S. E. had perhaps been premature in assigning himself to the group of permanent homosexuals. Then he suggested

that as the patient's father had died when he was young and as his stepfather was such an unsympathetic person, perhaps S. E.'s homosexual activity was chiefly driven by a wish for friendly companionship with other men. These comments reduced the anxiety and shame he felt about his homosexual activities.

The therapist tried to instigate more assertive behavior on the part of S. E. towards his parents, especially his stepfather; this the patient soon developed. Against his stepfather's advice he persisted in purchasing a second-hand car he wanted. This was a turning point and other similar triumphs followed. S. E. soon became more ardent in the courtship of his girl friend. After only 10 interviews and just as the therapy seemed to be getting properly under way, S. E. announced that he now felt entirely well and capable of handling his affairs; that he planned to get married shortly, and saw no reason for further treatment. At this point, the therapist had understandable reservations about the future course of events in this patient's life.

Follow-up interviews took place at intervals of 8 months, a year and not quite 3 years after the termination of therapy. S. E. had married and was getting along very well with his wife. His sexual relations with her had been entirely satisfactory from his point of view, although not at first for her. About a year after the marriage his wife had given birth to a baby. The patient had continued to emancipate himself from his parents. He had forced his stepfather to process his father's estate and also to put advances of money given to him on a sound basis as money borrowed against his legacy and not "hand-outs" at the pleasure of his stepfather. His work at college and his interest in it had improved markedly.

For the first 2 years of his marriage he had heterosexual relationships with his wife exclusively. Early in the third year of the marriage his wife became ill for several months and during the abstinence this occasioned, he had 4 homosexual experiences. When his wife recovered they resumed intercourse which improved further and became enjoyable to her as well as to him. The patient reported far greater pleasure in his sexual relationships with his wife than he had experienced in his homosexual relationships.

Case 3.—E. R., a 32-year-old Swedish hairdresser, was first seen in April, 1954. Seven years previously he had become aware of a slowly progressive diminution in his general enjoyment of life. He emigrated to South Africa early in 1952 and soon after began to suffer

constant feeling of tension combined with a varying amount of depression. Over the next 2 years he was treated unsuccessfully by several psychiatrists who gave him ECT, injections of vitamins and some psychotherapy.

The patient was born in a small town in Sweden. His father was amiable, but passive. His mother was an ambitious and querulous woman who complained of her son's stupidity, often screaming at him and beating him. She treated him like a girl, even forbidding him to play football. He grew afraid of her.

At the time of puberty, E. R. found himself attracted to men, although at first more socially than sexually. As he became older, he experienced no sexual attraction for women and when they occasionally made advances towards him became extremely anxious and experienced no sexual arousal. In contrast, he found pleasure in a succession of attachments to men with whom he had sexual relations. But he thought homosexuality sinful and shameful. Failure to master his homosexual impulses led to mounting anxiety from which (and from familial stresses) he sought relief by emigrating when he was 30.

The patient's reactions in many common social situations were extremely fearful and submissive. If a customer made an unjust criticism of him he would let her get away with it and merely feel helpless and tearful.

The 5 anamnestic interviews did not discover any causal sexual trauma, did not elicit any emotions of marked intensity, and were not accompanied by any change in the patient's condition.

The interviews of the next 2 months were devoted to encouraging assertive behavior for overcoming his social fears. He soon became much more positive in all his behavior. By the end of June his symptoms had almost completely disappeared and he was nearly always at ease with his customers. In the meantime, he had formed a couple of homosexual attachments, each of which, although satisfying while it lasted, had petered out in less than a month. Late in November, 1954 he reported complete freedom from symptoms.

He was not seen again until June, 1955, and then told the following story. He had given up worrying about the sexual problem and had been doing just what he pleased. In November, 1954, he had formed a pleasant homosexual association, but soon found himself unable to respond sexually. He broke off the relationship for a time, but when he resumed still could not respond sexually. He tried sexual relationships with several other men with repeated failure. He became antagonistic

towards men and said "If a man were to touch me, I would hit him."

About the middle of 1954 he had met a girl called Jean to whom he became attracted. He began to take her out and found her company pleasant. One night, after a party, when they were both slightly drunk, he kissed her and found this pleasant. He then began to respond more and more to her sexually and thought that he could have had coitus with her. Unfortunately, his inexperience led him to mishandle Jean and when he was seen in July, 1955 he reported that she had rejected him. He was consequently leaving for England on his own. There had been 21 interviews of therapy.

In January, 1956 he wrote a letter from London. He said that after he had had dinner at a woman's apartment, she suggested that he spend the night with her. Although strongly attracted, he felt very much afraid and excusing himself, got up to go home. But when he opened the front door it was raining heavily. He decided to go to bed with her and risk the chagrin of failure. To his delight, however, his sexual performance was completely successful. At the time of writing he had made love to this woman almost every night for a month, always with complete success, and with greater enjoyment than he had ever experienced with men. He was jubilant. He regarded this as his final vindication, feeling that he need now never again feel inferior to other men. Exclusively heterosexual behavior continued. In March, 1959 he wrote that he had married in January and his sex life had continued in every way satisfactory.

DISCUSSION

We think the data adequately show that these patients had established patterns of sexually deviant behavior which were succeeded by normal patterns of heterosexual behavior which were not mere transient changes since they remained established for the periods of our follow-up inquiries. How these changes came about requires an explanation.

THE ROLE OF LEARNING IN DETERMINING ADULT SEXUAL BEHAVIOR

The patterns of adult sexual behavior are learned expressions of the sexual drive. Experiences with persons resembling those who are later to become the objects of sexual impulses may importantly influence their expressions. In a boy, experiences

which are pleasurable with women (beginning with the mother) will tend to promote women as sexual stimuli. Social training and the assignment of social roles based on anatomical sexual differences contribute greatly to deciding the stimuli to which sexual responses will occur. But such social training is also a conditioning process, although a highly complex one, and not fundamentally different from the conditioning which occurs in the more individual experiences of the growing child within his family. Formative experiences capable of influencing the selection of stimuli to sexual pleasure may, and usually do, occur chiefly in childhood. However, they may occur later and we have insufficient grounds for thinking that childhood experiences are the only relevant ones or even always relevant in this connection (6).

In some circumstances, the sexual response towards a particular person or kind of person may be diminished while some sexual desire remains and is stimulated by other persons. If a boy or man finds women frightening to him, the anxiety they arouse may inhibit whatever sexual response they would simultaneously stimulate. Other persons such as small children (Case No. 1) or other men (Cases No. 2 and 3) may still stimulate sexual responses. Such stimulation by persons of the same sex may become further augmented by the play of other motives, *e.g.* a wish for companionship or for power. Ovesey has described the operation of these motives in promoting homosexual behavior as "pseudo-homosexuality" (7, 8). Our case No. 2, and several of Hadfield's cases (9), apparently sought men because these offered companionship and affection which they could not easily obtain elsewhere. However, such non-sexual attractions, like the sexual ones which accompany them, are influenced by the conditioning experiences which make men stimuli of pleasure when women stimulate anxiety.

THE PROCESSES OF CHANGE IN THE SEXUAL BEHAVIOR OF OUR CASES

Most people discover for themselves that if you stand up to a bully he becomes a pygmy, whereas if you run from him he becomes a giant. This principle deserves

better understanding and acceptance in psychopathology. An explanation of its effectiveness in terms of learning theory has been proposed elsewhere by one of us (4). Moreover, though generalization, an assertive response towards one person may reduce the capacity of other persons to stimulate anxiety. In the 3 cases reported here, the patients had anxiety stimulated by women, and this was accompanied by diminished sexual responses to them. When the patients developed assertive responses toward other people, their susceptibility to the arousal of anxiety became lowered so that the sexual stimulation of women was no longer outweighed by their stimulation of anxiety. Thus, the basic preference for women established early in life by social roles and other learning could now assert itself. The further experiencing of full sexual pleasure with women then reinforced the capacity of the women to stimulate sexual pleasure and the changed pattern of sexual expression was thus consolidated.

SEXUAL DEVIATIONS THAT ARE DUE TO ANXIETY ORIGINATING IN SEXUAL EXPERIENCES

We do not mean to imply that sexual experiences are never specific in the origin or removal of sexual inhibitions and deviations. The connections between anxiety and sexuality are specific in some cases, general in others, and perhaps of both kinds in still others. For example, if a mother arouses anxiety in a child during his sexual excitement (perhaps also stimulated by a woman, as in one of Hadfield's cases) sexual responses may be markedly inhibited while other responses remain uninfluenced.

Supposing that specific connections have been established between sexual responses and the arousal of anxiety, what can be done to alter these? Herzberg (10) assigned to homosexual patients series of graduated tasks designed simultaneously to reduce the anxiety aroused by women and increase the pleasure they evoked. Salter (11) has reported success in the treatment of homosexuality by the instigation of assertive behavior according to a theory and practice somewhat similar to our own. In the treatment of impotence with specific

connections between sexual responses and anxiety, one of us (J. W.)(4) has found successful the use of graded sexual responses controlled by the patient so that anxiety is not aroused by failure. As we mentioned earlier, Hadfield found beneficial effects in the recall of events which had apparently originally established the connections between sexual responses and anxiety. This brings us to the mechanism of action of such recall.

A CRITICISM OF CURRENT VIEWS ON THE THERAPEUTIC EFFECTS OF RECALLING PAST EXPERIENCES

The recovery of repressed memories and the uncovering and interpretation of specific sexual conflicts contributed nothing to the recoveries of our patients because these did not occur in the therapy or, so far as we know, outside it. This point deserves emphasis because Hadfield, on the basis of his observations in the treatment of homosexuality, has recently stated that his patients "were cured when, and only when, their propensities were traced back to infantile experiences"(9). Evidently, the recall of past painful events may contribute to recovery. A long line of cases extending from the early ones of Breuer and Freud(12) to those recently cited by Hadfield attest to this.

Hadfield attributes the benefits of this recall to the "release of repressed emotion" and in this is, of course, a modern spokesman for the traditional psychoanalytic theory of abreactions. However, it is doubtful (although not impossible) that emotions continue after what is called repression in a state of activity pressing towards expression. The popular analogies of such emotions to steam in a bottle are more picturesque than explanatory. We do not question the fact that anxiety can contribute to amnesias, only that the anxiety (or other "repressed emotion") is constantly welling up towards the surface of behavior. Davis(13) has pointed out that memory images are perceptions just as are those caused by current people or objects, and we respond to the stimuli in memories just as we do to those in other perceptions. The recall of a scene once painful can then evoke anxiety not as an

old de-repressed emotion, but in response to the stimulus for anxiety occurring in the immediate perception. Thus memory of the cruel mother may stimulate present anxiety rather than release old anxiety. This distinction is worth making because it bears on the process by which stimuli lose their capacity to evoke anxiety, so-called desensitization. This occurs if and probably only if the stimuli for anxiety are evoked in association with other stimuli which evoke non-anxious responses(3, 4).

Desensitization can occur by thinking alone under certain circumstances. Thus as a person ruminates some unpleasant event, he may bring into association with the memory images of the event, other thoughts which arouse other emotions that neutralize anxiety and so neutralize or antagonize the tendency of the event to stimulate anxiety. The process of desensitization through reassociation of a painful event proceeds better if the patient verbalizes the event and its associations to another person, usually a therapist. Desensitization to anxiety-producing stimuli may also occur in other ways than through the recall of past experiences. For example, it may be obtained by the systematic presentation of graded present-day anxiety evoking stimuli to the deeply relaxed patient(4).

Once freed from the concept of "repressed emotion" we become able to accept the fact that a psychogenic symptom can be modified or abolished without another appearing in its place(14). From the fact that anxiety is experienced when past traumatic events are recalled, Freud assumed that repression was a defense against anxiety and that symptoms were partial expressions of the repressed emotions and at the same time also defenses against the original emotions. These views became generalized without correction in the conventional literature of psychoanalysis so that nearly every psychogenic symptom came to be considered a defense against anxiety. It followed from this that any attempt to modify symptoms directly was at best a superficial tinkering and at worst, fraught with the danger of detonating a more serious illness. Yet the literature of psychiatry contains numerous instances of

the treatment and most beneficial removal of symptoms with conditioning techniques without the occurrence of other symptoms or any other adverse effects (4, 15, 16, 17, 18). Moreover, we have abundant evidence that many patients recover from psychoneuroses without psychotherapy (19, 20) and presumably without de-repression. Some neurotic responses clearly have defensive value for the patient, *e.g.*, social withdrawal to avoid persons who stimulate anxiety, and such responses cannot be stopped without arousing anxiety. But other symptoms are results or concomitants of anxiety. Most psychoneurotic symptoms are simply learned unadaptive responses and their unlearning usually includes a reduction in anxiety in that stimuli which formerly evoked anxiety no longer do so.

SUMMARY

1. Three cases of sexual deviation are reported in which a return to normal heterosexual behavior followed the development of assertive behavior on the part of the patients. Follow-up inquiries 3 to 6 years later showed that the patients had maintained their improvements.

2. In these patients the sexual deviations were determined by anxiety that did not have a sexual origin. The processes of their therapy are discussed, and also, more briefly, the therapy of those cases in which anxiety is specifically attached to sexual stimuli.

3. The recoveries in these patients were not related to recall of repressed memories of traumatic events or the working out of specific sexual conflicts. The alteration of sexual behavior did not lead to the occurrence of other symptoms or other undesirable side effects.

4. The processes whereby stimuli of anxiety lose their capacity to arouse anxiety

are discussed and it is suggested that the concept of "repressed emotion" has hindered an understanding of the processes of recovery from psychoneuroses with and without psychotherapy.

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CLINICAL NOTES

STUDIES ON THE NEUROCHEMISTRY OF SCHIZOPHRENIC AND AFFECTIVE DISORDERS

SAMUEL BOGOCH, M.D., Ph.D.¹

The earlier demonstration in this laboratory(1c, 1d, 4) of an abnormality in the concentration of "total neuraminic acid" in cerebrospinal fluid (CSF) in schizophrenic patients led to the development of quantitative fractionation procedures(1b, 1e) for the separation and measurement of the macromolecular hexoses and hexosamines of CSF as well as of neuraminic acid (Fraction G).

Table 1 shows the range and means of concentration of these substances in 236 individual CSF samples. Both the absolute quantities and the molar ratios of these constituents have been shown to vary markedly from individual to individual(1b). The relevance of these findings on central nervous system constituents to functional states of the nervous system as well as to possible chemical bases of individuality is now being studied.

Table 1 shows that the absolute concentration of macromolecular (bound) neuraminic acid in schizophrenic patients as a group is lower when compared to non-schizophrenic mental hospital patients, and to general hospital adult controls. Values are also lower for bound hexosamine in untreated schizophrenic patients. On the other hand, the concentration of bound hexose is approximately the same in schizophrenic patients as in controls and in patients with depressive disorders. Higher than usual values have been observed in both the bound hexose and hexosamine of patients with manic psychoses, and in bound hexosamine alone in chronic brain syndromes.

Repeated double-blind determinations over a period of months on individual patients of these substances show that there is a definite tendency to constancy in both

their absolute quantities and in their molar ratios, but that with gross changes in function there are concomitant changes in these carbohydrate constituents in macromolecular binding. Thus, in the change from depression to the normal affective state and to elation, whether it occurs spontaneously, with an antidepressant drug, or with electroshock therapy, an increase has been observed in the absolute amount of macromolecular hexose and hexosamine ranging from 46% to 510%. Similarly, in the reverse change, from the hypomanic to the depressed state, the opposite change in macromolecular hexose and hexosamine has been observed, that is, a decrease in the absolute concentrations of these substances. With treatment, schizophrenic patients have shown up to 400% increase in the concentration of bound hexosamine, but very much less change (usually an increase) in the concentration of bound hexose and neuraminic acid. (Table 1.)

Recent evidence from this laboratory relative to the concept of the "Barrier-Antibody System"(1c, 1d) function of neuraminic acid in the nervous system includes: 1. The demonstration of a serum precipitin to the neuraminic acid-containing brain ganglioside(1a), which has been utilized to localize brain ganglioside in the nerve cell body by the fluorescent antibody technique(1g); 2. The activity of brain ganglioside as membrane receptor (for viruses)(1f, 3); and 3. The effect of this substance on membrane-active systems (clam heart)(2).

The possible biosynthetic relationship of hexosamine to the more complex structurally related derivative neuraminic acid, considered in relation to the evidence on their 'maturation' in CSF(1b, 1c) and to the above findings on their macromolecular concentration in different psychiatric disorders leads to the formulation of the working hypothesis that there is an enzymatic

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TABLE 1

CONCENTRATIONS OF MACROMOLECULAR (BOUND) HEXOSE, HEXOSAMINE AND NEURAMINIC ACID IN CSF OF PSYCHIATRIC AND GENERAL HOSPITAL PATIENTS

	Fraction G					
	Hexose, $\mu\text{g/cc. CSF}$ (as glucose)		Hexosamine, $\mu\text{g/cc. CSF}$ (as galactosamine)		Neuraminic Acid $\mu\text{g/cc. CSF}$	
	Mean	Range	Mean	Range	Mean	Range
1. Schizophrenia, untreated	19.0	(4.0-50.5)	8.3	(1.8-24.2)	5.1	(2.3-8.6)
2. Schizophrenia, treated	22.0	(7.0-54.5)	16.0	(3.2-44.6)	6.2	(2.7-10.1)
3. Other (than 4, 5 and 6) Mental Hospital	26.8	(5.5-81.2)	8.5	(1.6-15.0)	7.8	(3.3-17.2)
4. Chronic Brain Syndromes	20.5	(11.0-31.0)	23.1	(5.1-60.0)	8.3	(4.4-11.9)
5. Manic Psychoses	72.2	(51.6-88.0)	32.5	(9.0-57.0)	—	—
6. Depressive Psychoses	19.6	(14.5-31.0)	13.6	(6.2-18.8)	11.0	(5.5-15.1)
7. General Hospital	22.5	(7.0-55.0)	13.5	(8.3-17.8)	10.6	(9.0-13.4)

disturbance in the synthesis or maintenance of both macromolecular hexosamine and neuraminic acid in schizophrenia, and that the first may be reversed (indeed 'over-compensated for') with therapeutic means at present available, but that the second is at present refractory.

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RESERPINE AS A THERAPEUTIC AGENT IN SCHIZOPHRENIA

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Despite much progress in the treatment of mental patients in recent years there still remain many patients who are unresponsive to various treatments.

Remembering Barnes and Kline's(1) earlier work on the subject and Braun's experience(2), we have used reserpine over a 2-year period at the Bronx VA Hospital for just such treatment resistant patients. Twenty eight male patients, aged 22 to 54, were selected for the study. All were schizophrenics with pronounced symptoms

of mania, excitement, negativism or periodic stupors. All were new admissions to the hospital but with a long history of mental illness. The patients served as their own controls. All had been previously treated with various phenothiazine drugs and 9 also had received ECT, insulin coma therapy or both combined. None of the patients had responded to therapy.

The patients were given 3 mg. of reserpine orally once daily and 5 mg. of reserpine intramuscularly once daily for 10 days, then slowly increasing up to 10 mg. daily intramuscularly for 20 more days if their response to the drug was not too favorable. If the response was favorable, the 5 mg. intramuscular dose was maintained for 20 to 30 days, then gradually decreased to a

¹ The following residents in Psychiatry at the Bronx VAH participated in this study: Bertram Barall, M.D.; Herbert Bengelsdorf, M.D.; Adolph Goldman, M.D.; and Harvey Ross, M.D.

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maintenance level of $\frac{1}{2}$ to 2 mg. orally once a day.

The usual precautionary measures were taken: temperature, pulse rate and blood pressure were done twice daily during the first week, and WBC was done biweekly. All patients received supportive psychotherapy and occupational therapy whenever their conditions permitted.

Sixteen patients (57%) improved very much so that they could be either discharged or sent to an open ward. Five patients (18%) became much more manageable but could not be discharged. Seven patients (25%) remained unimproved or became worse and had to be transferred to a chronic hospital.

All patients were evaluated clinically by psychiatrists and nurses.

There were the usual side effects in the majority of patients: nasal stuffiness; dryness of mouth; increase of appetite; somnolence; and about 25% of the patients developed marked Parkinsonian tremors with rigidity, characteristic gait and salivation. The medication was not given to any patient with a history of peptic ulcer or bronchial asthma, the usual contraindi-

cations for reserpine therapy. Side effects were easily controlled with the usual medications e.g. trihexyphenidyl (Artane) or benztropine methanesulfonate (Cogentin). In no case was it necessary to discontinue treatment permanently with reserpine because of side effects.

SUMMARY

The rapid and dramatic response of schizophrenic patients to treatment with the phenothiazines has resulted in a tendency to discard reserpine as a chemotherapeutic agent in this illness. Our experience suggests that there is a place in the therapeutic armamentarium against schizophrenia for reserpine, particularly in those cases displaying catatonic excitement or stupor with agitation and in those with manic features, especially when these patients fail to respond to the phenothiazines, ECT or insulin coma therapy.

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TRIALS WITH SEVERAL NEW DRUGS

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This is a brief note upon the use of the "newer" anti-depressant drugs in a private psychiatric practice over the past six months. The drugs used have been the MAO inhibitors and imprimane. The doses used varied from 3 to 24 mgs. a day of Catron, 50 to 300 mgs. a day of Niamid, 15 to 75 mgs. a day of Nardil and 50 to 300 mgs. a day of Tofranil.

These drugs were tried as an initial treatment measure in approximately 50 patients. They were in the usual clinical groups of depressions ranging from psychoneurotic depression, manic-depressive reactions in depressed phases, schizophrenic reactions with depression, and involutional psychotic reactions of an agitated depressive type. The results have been in the main ex-

tremely disappointing. There appeared to be little significant action beyond placebo effect, the majority of the patients have experienced no relief of their depressive symptoms though gratifyingly there have been extremely few side effects of a troublesome nature.

About 4 or 5 patients have shown a good "response." Three of these have been on Tofranil (a manic-depressive depressed entering a new depressive cycle, an involutional depressive who had relapsed after electro-convulsive treatments in the past but who retained her remission on Tofranil, and a neurotic depressive who had not responded to psychotherapy). One patient who has shown a moderate response to Catron, is suffering from a schizophrenic character disorder with chronic depression:

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she has experienced some relief of symptoms on Catron 6 mgs. a day.

In a private psychiatric practice dealing with a wide range of problems in a group of patients who might be considered to be

more responsive to treatment than institutionalized patients, the results are disappointing and certainly not consistent with the claims made by the advertisers or in reports in the literature.

TOXIC AND OTHER SIDE EFFECTS OF NARDIL PHENELZINE SULPHATE W-1544A

UJAMLAL C. KOTHARI, M.D.¹

Contrary to the experiences of previous workers, we have come across cases where liver function test became abnormal after the use of this drug and one patient developed a marked drug rash soon after the first dose of Nardil.²

Toxic effects on liver: This study consists of 13 patients, on whom C.B.C., C.C.F. (cholesterol cephaline flocculation), B.U.N., and urinalysis were done and were found normal prior to putting them on 15 mg. of Nardil t.i.d. Seven of them developed C.C.F. 1+ to 4+ during the treatment. For simplicity and better understanding they are divided into 3 groups.

Group A consists of 2 patients who developed C.C.F. 2+ to 3+ after one week's treatment. In one when the medication was continued, C.C.F. became increasingly positive. When the drug was discontinued, C.C.F. returned to normal. When the drug was discontinued with the other patient, C.C.F. became normal immediately. Same patient was again put on smaller doses increasing gradually to 15 mg. t.i.d. without further sign of liver damage.

Group B consists of one patient who not only developed C.C.F. 3+ after one week's treatment but also developed C.C.F. 2+ to 3+ after few weeks' treatment as a cumulative toxic effect like group C. C.C.F. in this case returned to normal on reducing the drug.

Group C includes 4 patients who did not show any immediate hepatotoxic effect but did develop C.C.F. 1+ to 2+ after few weeks' treatment. In two of them, the next C.C.F. report was normal despite con-

tinuation of the drug; but one showed more positive C.C.F.

None of them developed any clinical sign or symptom of liver disorder.

Drug rash: Unlike the reports by previous workers, one of our patients developed a marked, red macular rash with mild itching all over the body, which did not respond to usual anti-histamine treatment but gradually disappeared on discontinuation of the drug. Same patient was placed on smaller doses which were gradually increased to 15 mg. t.i.d. without further reaction.

Other side effects: Two of our patients, having a history of fluctuating blood pressure, developed hypotensive reaction with fainting and dizziness. This effect, being mild, was prevented by reducing the medication.

Insomnia and restlessness were the complaints of 3 patients and were treated with mild sedative and Meproamate respectively.

Nausea, vomiting and headache *etc.* were not noticed in our patients.

SUMMARY

This article being mainly about the side effects of phenelzine sulphate, its value as an anti-depressant agent is not discussed.

Risk of hepatotoxic effects of this drug is worth keeping in mind as 7 out of 13 cases showed some abnormality of liver function test. Phenelzine sulphate may produce drug rash as many other drugs do. Patients, having low or fluctuating blood pressure may develop hypotensive reaction while on this drug and should be under close supervision. Sometimes it produces side effects like insomnia and restlessness

¹ Danville State Hospital, Danville, Pa.

² Warner-Chilcott Laboratories. Phenelzine Nardil (W-1544A). For investigation use only.

which can be relieved by sedative and Meproamate.

No toxic effects on kidneys or blood were observed in our study.

All the above effects are mild and reversible and may be treated by reducing or

discontinuing the medication and with adjuvant therapy.

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CLINICAL FINDINGS AND PSYCHOPHYSIOLOGICAL TESTS OF THE EFFECTS OF A NEW PSYCHOPHARMACOLOGIC AGENT : DORNWAL¹

CARNEY LANDIS, Ph.D.,² JOHN R. WHITTIER, M.D.,³
DONALD DILLON, Ph.D.,² AND RUTH LINK, M.A.²

In earlier investigations(1, 2, 3, 4), changes in psychophysiological performances were found which could be attributed to "active" psychiatric treatment methods such as psychosurgery, electroconvulsive therapy, insulin coma therapy, and certain of the ataractic drugs. The changes were shown by the tests of flicker-fusion thresholds, speed of choice reaction, speed of tapping, the Purdue Pegboard dexterity, and both Test Age and Qualitative scores on the Porteus Maze. Patients treated only with psychotherapy gave no systematic test score changes or losses.

A new drug, Dornwal (aminophenylpyridone), which seemed to influence behavior without the disadvantages of sedation, was made available to us through the courtesy of Dr. John V. Seudi who suggested that we test its therapeutic properties with a probe group of hospitalized psychiatric patients.

Eleven recently admitted patients (6 schizophrenics, 3 chronic alcoholics, 2 anxiety hysterics) at the Creedmoor State Hospital were treated with either 200 mg., t.i.d. or 400 mg., t.i.d. Dornwal, each over a 2-week period. At the end of the period, the ward physicians and examining psy-

chologists rated the patients as to outcome as follows : 5 were much improved or recovered ; 4 were improved, and 2 were unimproved.

The typical comment on the part of the patients after having ingested Dornwal was, "I feel calmer and more relaxed." Ten of the 11 patients made remarks to this effect, and their statements and behavior agreed for 9 of these 10 patients. Of the 2 unimproved patients, one said he felt no better nor did he behave in a calmer fashion, and one said he felt calmer but did not behave accordingly.

Two of the 11 were at first negativistic, but following treatment, negativism was reduced. Manifest hallucinatory and delusional activity was stopped in 2 patients during Dornwal treatment. The behavior and complaints of 4 others indicated reduced anxiety and tension at the end of the drug therapy and for at least one week thereafter. In one patient very evident finger tremors ceased. There was less evident depression with 4 patients. One patient stated that, "the pills slow me down." Only one patient showed any noticeable tendency to be drowsy or sleepy.

A relationship between dosage and clinical outcome was manifested. Of the 5 patients receiving Dornwal, 200 mg., t.i.d., only one was rated as much improved. Four of the 6 patients, who received 400 mg., t.i.d., were rated as much improved.

Dornwal did not depress any of the performances in our battery of psychophysiological tests. Very probably it had a slight facilitating effect upon most of the test

¹This investigation was facilitated by NIH grant M-872 and by assistance received from the Wallace and Tiernan Co. The latter furnished the drugs and placebos utilized. The investigation was done at the Creedmoor State Hospital. We are most grateful to Harry A. LaBurt, M.D., Senior Director, and his staff for their cooperation and assistance.

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measures but this facilitation was somewhat confounded by practice effects.

In terms of grouped data, no statistically significant differences between any test performances before, during, or after drug treatment were found. However, the analysis of the data for individual patients showed that Dornwal did not act to interfere with the scores on the test performances in flicker-fusion, choice reaction time, Tapping, Purdue RLB dexterity or Porteus Maze tests. In fact, particularly at the 400 mg., t.i.d. dose level, Dornwal acted as a mild stimulant.

During the two weeks that Dornwal was given, urinalysis and CBC determinations were secured at regular intervals from each patient. At no time did these measures exceed the normal range of variation.

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THE EFFECT OF DEANOL ON THE ACTIVITY OF CHRONIC SCHIZOPHRENIC PATIENTS

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AND JOHN E. LUBACH, Ph.D.¹

This study was undertaken to evaluate the effect of the addition of the energizer, deanol², to the chemotherapeutic regime of chronic schizophrenic patients. It is assumed that deanol acts as a central nervous system energizer by crossing the blood-brain barrier and being converted intracellularly into acetylcholine (1, 2). This energizing effect might be expected to be beneficial to patients who, although engaged in active chemotherapeutic and milieu treatment programs, have stabilized at relatively low levels of adjustment characterized by apathy, disinterest, and apparent lack of energy. For this investigation, it was hypothesized that any increase in alertness, readiness to relate to others, or interest in environment resulting from the addition of deanol to their chemotherapeutic program should manifest itself in an improvement in their functioning in an activity such as occupational therapy (OT).

For this 3-month double blind study,

subjects were 20 male chronic schizophrenic patients ranging in age from 21 to 64, who had been hospitalized continuously for at least one year. They attended OT in two sections of 10 patients each, the assignment determined by a random selection procedure. These sections were then each divided into experimental and control groups of 5 subjects equated on the basis of evaluations at the end of a 2 week observation period. The 10 patients in the experimental groups were started on deanol in doses of 200 mg. daily for 6 weeks. The 10 control subjects received placebo. At the end of 6 weeks the dosage was raised or lowered by the ward physician according to clinical indications, some patients receiving as much as 300 mg. daily. Current medications including tranquilizers were continued and adjusted as indicated. However, no patient received another energizer or central nervous system stimulant.

During the entire investigation, bi-weekly evaluations of performance were made by the two occupational therapists who worked with both sections of patients. Evaluations were made by means of the MACC Behavioral Adjustment Scale (3) and direct ratings of sociability, activity involvement, and appropriateness of behavior. Ratings on the same scales were made by the two ward physicians to evaluate ward behavior.

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² Deanol (2-dimethylaminoethanol) was supplied as Deaner®, the para-acetamidobenzoic acid salt of deanol, by Riker Laboratories, Inc., Northridge, California.

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at the beginning and at the end of the 3 months.

DISCUSSION AND SUMMARY

For both the OT and ward evaluations, the scores used were the combination of the ratings by the pairs of raters. In the OT setting both drug and placebo groups showed a consistent trend toward improvement as might be expected from adaptation to the experimental situation. This trend was statistically significant on 3 of the 4 measures used. However, the major hypothesis was not supported in that there were no discernible differences between drug and control groups in amount of change. This suggests that the addition of deanol had no appreciable effect in making the subjects more ready to respond in this treatment situation.

The ratings of ward behavior revealed no recognizable changes for either the experimental or control groups. As a further indication that deanol was ineffective in producing the type of improvement anticipated, the occupational therapists, ward

physicians, and other ward personnel involved were unable to guess better than chance at the end of the experiment which patients had been receiving the drug and which placebo.

Laboratory investigation during the test period included weekly determinations of SGP-transaminase, urine icotest, hemoglobin, white blood count and differential and gamma globulin turbidity, with a monthly serum alkaline phosphatase determination. The only side effect of the drug noted was a transient leucocytosis in one patient.

These results are regarded as casting doubts on the therapeutic value of deanol for chronic schizophrenic patients.

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CLINICAL USES OF SCTZ—A PRELIMINARY REPORT¹

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SCTZ, which is a chlor-derivative of the thiazole portion of the thiamine (vit. B1) molecule (a 5 B chloroethoxy-4-methyl-thiazole salt) has been favourably reported upon by some French workers (Laborit *et al.* 1957), in the treatment of psychiatric conditions characterised by agitation, restlessness and over-activity. Intravenous administration was found to produce sleep closely resembling normal sleep which was believed to be due to an inhibition of the cerebral cortex with no action on the reticular formation or the autonomic nervous system; its mode of action thus differing from some other tranquilizing agents. No serious toxic symptoms were encountered in the clinical trials in France.

The drug has been used in a small series of 11 cases during the last 6 months at Poona. Five were suffering from psychotic (hypomanic 2, schizophrenic 3) and 6 from psychoneurotic reactions. All the psychotic and most of the psychoneurotic cases were agitated and restless. In 3 psychoneurotic cases the drug was used for narcoanalysis in the place of the usual barbiturate preparations like amylobarbitone (amytal sodium) or thiopentone (pentothal).

METHOD

The drug was administered intravenously (100 to 160 c.c.) in 3 to 6 minutes in all but 2 psychoneurotic cases who received the oral tablets only. In those who received intravenous injections the continuation treatment was in the form of tablets. In two female psychotic patients who were most uncooperative, it was decided to give ECT

¹ A detailed report is being published in the *Indian Journal of Psychiatry*, Oct. 1959.

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and follow it by SCTZ intravenously.

In the beginning a 100 c.c. syringe was used for administering the drug but as it was too difficult to handle, it was soon replaced by a 20 c.c. syringe with a two way connection.

RESULTS

The intravenous injections of the drug were followed rapidly by sleep which was, however, of very short duration (a few minutes to half an hour) in most cases, thus necessitating repeated injections. There was a symptomatic relief in 6 out of 8 cases of agitation, restlessness and overactivity and one case of hypomania became completely asymptomatic within 10 days and continues so 6 months after the treatment. The drug had no effect in one case of schizophrenic (catatonic) excitement and another case of anxiety neurosis.

A chronic psychoneurotic who had used several other preparations previously gave a favourable report in respect of SCTZ tablets and said that the sleep promoting effect was very rapid and appeared within 5 to 7 minutes.

A combination of ECT and SCTZ used in two cases of this series did not produce any undesirable effect, nor did a simultaneous use of this drug and chlorpromazine lead to any untoward effect.

SCTZ was found to be adequate for the purpose of narcoanalysis and promoted the establishment of rapport in all 3 cases where it was used for this purpose; 60 c.c. of the solution intravenously was found sufficient in these cases. The patient was able to answer questions but a release of emotions reported by some French workers using the drug, and which also frequently

occurs with preparations like sodium amytal and pentothal, did not take place in any of the cases nor was there any euphoria and tendency to overtalkativeness, which not uncommonly follows, and results in a disturbed sleep, when a combination of a barbiturate with a cerebral stimulant like methedrine, is used for narcoanalysis. The use of SCTZ for narcoanalysis has not been mentioned in previous literature.

Phlebitis occurred in 5 cases, probably due to the low pH of the solution.

CONCLUSION

Owing to the small number of cases treated so far, no firm conclusions can be drawn. The drug when administered intravenously produces sleep very rapidly which lasts for a few minutes only, thus necessitating frequent injections or recourse to an intravenous drip. The quantity required at one time varies from 100 to 160 c.c. In uncooperative cases when it is difficult to administer the drug, it can be injected after giving an ECT. Phlebitis appears to be a common complication and was met with in 5 cases. Further controlled trials are indicated.

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ACKNOWLEDGEMENTS

Thanks are due to Messrs. Franco Indian United Laboratories, Bombay, for supplying the drug and to the Director of Medical Services, Army, for permission to publish this paper.

COMMENT

A CHILD DIES

She was only six years old. Still she had a right to live. It was an emergency case—the all too common tragedy of the streets. This time it was a depressed compound fracture of the skull of a little child. Her condition was critical. She might not live anyway. But then again she might, if she could have everything that medical science could offer—immediate operation, and then, as indicated routine, a blood transfusion. The surgeons were there, trying to do their duty—to save a life.

But the child, being a minor, could not authorize the blood transfusion. Were there not older and presumably wiser persons who could speak for her, and satisfy that formality? Her parents were there, but they exercised their ownership rights and withheld consent to the transfusion. The child died.

Why did the parents refuse a measure that might have saved her life? They were Jehovah's Witnesses and their authority was some lines in Leviticus and Deuteronomy forbidding the children of Israel to "eat blood."

This all happened in New Jersey and is reported in the *AMA News*, Dec. 14, 1959.

Hospital officials plead in vain with the parents to permit the transfusion. By legal process they were brought before a judge whose efforts were likewise fruitless. There is an amendment to a New Jersey Statute

which upholds the right of a parent to take the stand these parents took if it is based on a "religious belief."

This raises the question, as to the nature and quality of the religious belief involved. Is it evidence of a sound and disposing mind? Does it indicate proper parental care for the welfare of the child, even for the life of the child? In a word, are these parents suitable persons to have custody of the child? It is common knowledge that children are routinely removed from the custody of their parents on evidence that they are not receiving the proper care and protection.

In the present case this little girl could have been made a ward of the court and given the necessary treatment regardless of the parents' veto; that is, if under New Jersey law such procedure is recognized. In any case there was not time; the child was dead before the required legal steps could be taken.

The representative of the *AMA News* asked the attorney for the hospital what could be done to prevent recurrence of a similar situation. The lawyer replied: "I guess we need an amendment to the amendment."

The object lesson of this case in New Jersey should be taken note of throughout the land.

CORRESPONDENCE

CORRESPONDENCE

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : With reference to the clinical note entitled "A Modification of the Forrest Test for Phenothiazines" by Mr. Jack J. Heyman, Drs. M. Almudevar and Sidney Merlis in the September 1959 issue of *The American Journal of Psychiatry*, we studied the applicability of 2% FeCl_3 stained filter paper of different grades and textures. We found that Whatman 3MM filter paper gave discrete and stable colored spots with this modified procedure. It compared favorably in sensitivity and stability of developed phenothiazine color with a sulfonic acid cation exchange paper (Amberlite XE-69 supplied through the courtesy of Rohm &

Hass Company). Furthermore, the originally pure white Whatman 3MM paper provides a more brilliant yellow background (after impregnation with 2% FeCl_3 solution) and better contrast for the violet or purple color produced from phenothiazine metabolites than the off-white sulfonic acid resin paper. We feel that the advantage in simplicity of this modification can be further increased by the use of Whatman 3MM filter paper.

T. H. Lin, Ph.D.,
Luther W. Reynolds, B.S.,
Research and Development Div.,
Smith Kline & French Laboratories,
Philadelphia, Pa.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : Thank you for your courtesy in sending me the enclosed letter from Dr. T. H. Lin.

As a matter of fact, we had tried lighter grades of filter paper with very poor results. Dr. Lin's observation on the heavy weight Whatman 3MM paper has been confirmed by us. This paper is certainly superior to the SA-2 ion exchange resin

impregnated paper and comparable to the SA-1 paper which is much lighter in color than the SA-2.

We have been working with another modification, using Dr. Forrest's mercuric nitrate reagent. We feel that this is even superior to the FeCl_3 impregnated paper because we can now detect the low-dose drugs such as Stelazine, Trilafon, etc.

Jack J. Heyman.

NEWS AND NOTES

SYMPOSIUM ON LSD-25 SCHEDULED.—The first invitational conference of Napa State Hospital, Imola, California, a symposium on Lysergic Acid Diethylamide (LSD-25), will be held on Saturday, January 16, 1960, sponsored jointly by the hospital and Sandoz Pharmaceuticals. Basic science aspects of this hallucinogenic drug will be discussed during the morning; the clinical and therapeutic status during the afternoon.

Sidney Cohen, M.D., Chairman, Research Committee, Veterans Administration Center, Neuropsychiatric Hospital, Los Angeles, will be the guest lecturer. Other participants will include faculty members from Stanford and the University of California medical school, Langley Porter Neuropsychiatric Institute, and practicing psychiatrists and psychologists.

NEUROLOGY RESIDENCY BRONX V. A. HOSPITAL.—The Bronx Veterans Administration Hospital in affiliation with Columbia University announces an approved 3 year residency program in neurology. In addition to work at the V. A. Hospital, residents spend 6 months full time at Montefiore Hospital, 4 months full time in the department of neuropathology at the Columbia-Presbyterian Medical Center, and over a period of 14 months attend various neurologic outpatient clinics of the New York Neurological Institute. Lectures in the basic sciences are given at Columbia University. The training program is under the immediate supervision of Dr. Carl B. Booth in collaboration with Dr. Daniel Sciarra, Dr. Abner Wolf, and Dr. Tiffany Lawyer, Jr.

Any interested candidates may obtain information about this program by writing directly to Carl B. Booth, M.D., Chief, Neurological Section, V. A. Hospital, 130 West Kingsbridge Road, Bronx 68, N. Y.

MASSACHUSETTS MENTAL HEALTH CENTER TRAINING PROGRAM.—To help fill the need for research scientists in the mental health field, the National Institute of Mental Health has awarded a grant of \$400,000 to

Harvard Medical School and Massachusetts Mental Health Center for the training of selected psychiatric residents after their third year of training or Ph.D.s interested in mental health research careers. The candidate may be attached to one of 8 laboratories, including clinical psychiatry, social science, psychology, psychophysiology, psychopharmacology, neurochemistry and neurophysiology, for his major "arbeit." In addition there will be interdisciplinary seminars involving the designated laboratories from the Harvard Quadrangle and from the Massachusetts Mental Health Center Research Department. Special formal and informal instruction also will be arranged to suit the candidates' needs.

The program is under the direction of Dr. Milton Greenblatt (Assistant Superintendent and Director of Research at the Center), and Dr. Jack R. Ewalt (Superintendent and Professor of Psychiatry).

LATIN AMERICAN SOCIETY OF EEG AND CLINICAL NEUROPHYSIOLOGY.—Because of the expanding interests in the branch of electroencephalography and clinical neurology, the South American EEG Society has incorporated as one of its members the Mexican Society of EEG. This incorporation has brought a change in the name of the EEG Society which henceforth will be known as the Latin American Society of EEG and Clinical Neurophysiology.

Its Officers are: Dr. Carlos Villavicencio, of Santiago, Chile, President; Dr. Paulo Vaz de Arruda, of Sao Paulo, Brazil, President-elect.

Dr. Abraham Mosovich, of Buenos Aires, Argentina has been elected Honorary Secretary of the newly expanded society.

DR. BRODY HEADS PSYCHIATRY, UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE.—Dr. Eugene B. Brody has been appointed Chairman of the Department of Psychiatry and Director of The Psychiatric Institute of the University of Maryland School of Medicine. He succeeds the late Dr. Jacob E.

Finesinger. Dr. Brody came to Maryland from Yale in 1957 as professor of psychiatry and has been Psychiatrist-in-Chief of the University of Maryland Hospital and The Psychiatric Institute since 1958.

AMERICAN PSYCHOPATHOLOGICAL ASSOCIATION, INC.—The Association will hold a symposium on the "Psychopathology of Aging" at its 50th annual meeting at the Park Sheraton Hotel, New York City on Friday and Saturday, February 19 and 20, 1960. This symposium will be published in the course of the year.

GUIDEPOSTS TO MENTAL HEALTH.—A revised edition of *Guideposts to Mental Health* is now available from the New York State Department of Mental Hygiene. Most popular of the department's many publications, the seven-pamphlet series has required 8 printings to distribute more than 2½ million copies since its debut in 1949. The text was written by Margaret M. Farrar, director of mental health education and information.

Single copies or complete sets of the series, titled *Life Begins*, *School Days*, *Teen Time*, *Your Marriage*, *Your Job*, *The Middle Years*, and *The Golden Age*, may be obtained by anyone without charge from the Office of Mental Health Education and Information, Department of Mental Hygiene, 240 State Street, Albany, N. Y.

AMERICAN PSYCHOSOMATIC SOCIETY.—The 17th annual meeting of the society will be held at the Sheraton-Mt. Royal Hotel, Montreal, Saturday and Sunday, March 26 and 27, 1960.

At the Sunday morning session there will be a panel discussion on contributions of behavioral scientists to psychosomatic medicine by speakers representing anthropology, medicine, psychiatry and sociology.

Registration fee for non-members is \$5.00, students, interns, residents and fellows \$1.00.

LONDON CONFERENCE ON THE SCIENTIFIC STUDY OF MENTAL DEFICIENCY.—The London conference on the scientific study of

mental deficiency will be held July 24-29, 1960, at the British Medical Association's Headquarters, Tavistock Square, London, W.C.1.

A wide range of subjects will be covered providing information on the latest scientific developments in the field of mental deficiency with opportunities for discussion. Invitations to give papers have already been provisionally accepted by outstanding workers from Great Britain, Belgium, Denmark, France, Germany, Holland, Sweden and the United States.

Membership of the conference is open to professional workers in all branches of the mental deficiency field; medical, psychological, educational, social and administrative.

Further information may be obtained from the president of the International Conference Committee of the American Association on Mental Deficiency, Mr. Harvey A. Stevens, 301 Troy Drive, Madison 4, Wisc., or from Arthur W. Pense, M.D., New York State Department of Mental Hygiene, 240 State Street, Albany, N. Y.

TWELFTH ANNUAL INSTITUTE IN PSYCHIATRY AND NEUROLOGY, NORTH LITTLE ROCK, ARK.—This annual institute will be held February 25 and 26, 1960, at the North Little Rock Division of the Consolidated Veterans Administration Hospital.

In addition to psychiatric sessions, there will be conferences in clinical psychology, psychiatric social work, psychiatric nursing and dietetics. There will be various social activities including a dinner the evening of February 25 when Dr. Mathew Ross will be guest speaker.

THE HOFHEIMER PRIZE.—This prize of \$1,500 is awarded annually by The American Psychiatric Association for an outstanding research contribution in the field of psychiatry or mental hygiene which has been published during the previous 3-year period. Studies in press or in preparation are not eligible.

This competition is open to citizens of the United States and Canada, not over 40

years of age at the time the study was submitted for publication; or to a research group whose median age does not exceed 40 years. The next award will be made at the annual meeting of the Association in May 1960. Entries submitted to the Prize Board before March 1, 1960, will be considered. It is imperative that 8 reprints or duplicated copies of each entry as well as the necessary data concerning age and citizenship be sent to David A. Hamburg, M.D., Chairman, Hofheimer Prize Board, National Institute of Mental Health, Bethesda 14, Maryland. All entries are independently evaluated by each member of the Hofheimer Prize Committee and final selection determined by equal vote.

TAPE RECORDINGS, THE WOODS SCHOOLS, LANCHORNE, PA.—The president of the Woods Schools announces 2 new recordings from the conference on "Counseling Parents of Children with Mental Handicaps" held in cooperation with the University of Minnesota :

1. "Counseling with Parents at Time of First Knowledge of Retardation," by Reynold A. Jensen, M.D., Professor of Psychiatry and Pediatrics, University of Minnesota.
2. "Helping Parents in a Community Setting," by Harriet E. Blodgett, Ph.D., Assistant Professor, Institute of Child Welfare, University of Minnesota.

These records (12-inch, double-sided, high fidelity discs) can be borrowed for group meetings without cost except for shipping charges both ways. Three weeks' advance notice necessary.

SURVEY OF PSYCHIATRIC FACILITIES IN COLORADO.—At the invitation of Governor McNichols of Colorado, Governor Rockefeller of New York has authorized a survey of psychiatric facilities in the former state by Commissioner Paul H. Hoch of the New York service. Dr. Hoch will go to Denver late in January where he will aid in setting up a long-range mental health program.

In giving his approval, Governor Rockefeller said, "The administration is happy to

cooperate in strengthening mental health programs in the states and to make Dr. Hoch's services available to that end."

CORRECTION.—In the December 1959 Journal, line 8 of footnote 3, page 549 should read . . . 10 to 150 mg. . . instead of . . . 10 to 15 mg. A further correction made by the author is that the last paragraph on p. 549 should start : "Trifluoperazine (Stelazine) . . ." instead of "Trifluopromazine . . ."

BIRTHDAY PORTRAIT FOR CLARENCE B. FARRAR.—On his eighty-fifth birthday, November 27, 1959, at a dinner in his honour at the Albany Club, Toronto, Dr. Farrar was presented with his portrait, painted by the well-known artist, Archibald Barnes, R.C.A.

Former students and colleagues had gathered from many points in Canada and the United States to pay tribute to a great teacher. Professor D. Ewen Cameron of Montreal made special mention of the guest of honour's important contribution as Editor-in-Chief of the Journal of the American Psychiatric Association since 1931.

Dr. C. M. Hincks spoke about the "early days," drawing attention to the fact that Dr. Farrar was the first full-time professor of psychiatry in Canada on his appointment in 1925. Dr. D. G. McKerracher of Saskatoon dealt with the postgraduate era, depicting "a conference" with great clarity and humour.

After presentation of the portrait, Dr. Farrar replied by thanking the contributors and then went on to pay tribute to his predecessor, Dr. C. K. Clarke as well as others who had been associated with him until his retirement in 1947.

Congratulatory telegrams were received from individuals and organizations attesting the esteem in which he was held as Professor, Department of Psychiatry, University of Toronto : and, in a sincere and witty epilogue, Professor A. B. Stokes summarized the sentiments held by all who have been fortunate enough to be associated with Dr. Farrar in his long career of such great significance to the advancement of Psychiatry.

BOOK REVIEWS

OBJECTIVE APPROACHES TO TREATMENT IN PSYCHIATRY. By *Leo Alexander, M.D.* (Springfield: Charles C Thomas, 1958, pp. 139. \$4.50.)

Anyone venturing to write a textbook on treatment in psychiatry during 1958 was a brave person. So much was happening in so many fields; approaches came from diverse areas; results of various treatments remained open to question; yet great progress was being made during this year.

The writer of this review can vouch for the fact that Dr. Alexander is a brave pioneer in the many facets of psychiatric treatment. Also, he is about as objective and scientific, yet pragmatic as any contributor in the field of psychiatric therapy.

To condense the *Treatment in Psychiatry* to a little over 100 small pages must have been a prodigious undertaking. And Dr. Alexander must have known full well that many aspects of his "arbeit" would change from the time he submitted the manuscript until the book came out and reviews were published.

That Dr. Alexander is eclectic in approach is not to be denied. He is well qualified in psychoanalytic therapy. He has had extensive first-hand experience in the various types of shock treatment as well as the numerous drug therapies. His range of experience extends from state mental hospitals through army service to private practice, both abroad and in this country.

As the title indicates, the author starts with a plea for objectivity in acceptance of treatment methods, recognizing that almost all psychiatric therapy is empirical and symptomatic. Sharpening of diagnostic and prognostic evaluations is called for as a firmer basis for therapeutic decision. Considerable emphasis is placed on the Funkenstein test and other autonomic test responses in relation to treatment.

Throughout the book there are numerous interesting, discerning and challenging discussions that help to bridge the gap between "organic" and "functional" viewpoints. The "organic" is in the field of neurophysiology and not in pathology or anatomy except for consideration of the autonomic system. The Pavlovian theories pertaining to excitation and inhibition (and as refined and elaborated by Gantt and others) are brought into the interpretation of anxiety, depression, hallucinosis, delusion formation, etc. The effect of these

emotional and physiological factors on the ego, and reaction of the ego to them become an important part of the total picture that is the guide for treatment. A review cannot do justice to the clearly stated and documented theories put forth by Dr. Alexander.

In this volume there are some rather definite statements about the "treatment of choice," such as the value of insulin shock therapy in schizophrenia, the excellent results of ECT in depressive conditions and the advantages of psychotherapy in neuroses. In "Drug Therapy," Chapter V, the author gives a compressed (20 pages), yet fairly complete survey of this rapidly expanding field. "Frontal Lobotomy" is discussed in 5 pages and brought into an up-to-minute perspective as a therapy of last resort. Again, the author was brave in attempting to discuss psychotherapy in 19 pages, but nevertheless there is much food for thought in this chapter which reflects Dr. Alexander's personal eclectic approach and understanding.

The extensive list of references is well chosen and the volume has an excellent index. This small volume should not be judged by its size. It is recommended for reading by psychiatrists, neurologists and others in related fields, not so much as a guide for specific therapy in an individual case but for stimulation to further thought and research in therapy with due consideration of Dr. Alexander's hypotheses and his pragmatic yet objective approach.

LLOYD J. THOMPSON, M.D.,
Winston-Salem, N. C.

GROSSE NERVENÄRZTE. Vol. II. Edited by *Kurt Kolle.* (Stuttgart: Georg Thieme Verlag, pp. vii + 251, 14 ills., 1959. D.M. 29.40. \$7.00.)

In 1956 Professor Kolle brought out a volume, titled as above, containing biographies of 21 great neurologists and psychiatrists of the modern era, the earliest included being Pinel. He called attention to the difficulty, in order to keep the book within bounds, of making selections from among the many great names of the 19th and 20th centuries; and held out the possibility that a second series might follow. Here it is. And now again the compilation involved the same problems as the first. Judging by the importance of this work one may hope that a third volume may be under consideration. In his preface the

Herausgeber even indicates that likelihood.¹

The persons whose life stories are told here are: Golgi, Nissl, Alzheimer, Brodmann, the Vogts, Helmholz, Quincke, Esquirol, Th. Meynert, Wernicke, Adolf Meyer, Gaupp, Pierre Marie, Babinski, Henry Head, Economo, Horsley, Walter Dandy, Clovis Vincent, Dubois, Hermann Simon.

It is especially to be noted that Kolle selected his collaborators on the basis 1) of their established research record; 2) of their expert knowledge of their subject; 3) as far as possible, of their close personal contact with the persons they were to write about. Any one who has heard a speaker discuss a great man he, the listener, has intimately known, but the speaker has not, will appreciate the importance of the third qualification.

To mention a few of the contributors to the present volume: the editor writes about Geheimrat Heinrich Quincke who often accompanied his father, Geheimrat Kolle, and himself, then a medical student, on their evening walks. The debt of psychiatry and neurology to lumbar puncture, first practiced by Quincke and reported in 1891, can hardly be overestimated.

Henri Ey contributes the biography of Esquirol, friend and favorite pupil of the great Pinel. It was Esquirol who was mainly responsible for asylum reform in France and for the humane provisions of the Act of 1838 which still holds good today.

Sir Geoffrey Jefferson has written the chapter on Victor Horsley, scion of a family of musicians and painters. Horsley's pioneering hypophysis operation is dealt with, and Cushing's criticism and the differences between the two great neurosurgeons are touched upon.

Erwin Stransky writes about that singular scholar Constantin von Economo. Born in Rumania of a distinguished Greek family, he grew up in Trieste where language and culture were mainly Italian and chose Vienna as his ultimate home. He is famed as the discoverer of encephalitis lethargica (1917).

Oskar Diethelm is the author of the biography of Adolf Meyer; whose formulation of the concept of psychobiology wherein a multiplicity of factors, genetic, psychological and social, determining habit formation and personality type and likewise predisposition to mental health or illness, has been widely influential in both American and British psychiatry. His teaching has been aptly summed up as a "common sense psychiatry."

In writing about Franz Nissl, Hugo Spatz points to the remarkable fact that Nissl, the 24-year-old medical student at the University of Munich, wrote a prize essay on the pathological changes in the nerve cells of the cerebral cortex, wherein he was first to describe the particles embedded in the cytoplasm which have ever since borne his name, differentiated fixing and staining methods for different structures, as cells and fibres, described 7 forms of pathological nerve cell changes, likewise the laminar structure of the cortex—in short in that astonishing student essay laid the foundation of the histopathology of the cerebral cortex, indicating the changes characteristic of general paresis and showing the possibility of differentiating other psychoses associated with organic brain changes.

It would be a pleasure to give more than these fragments of the stories mentioned above, and to include reference to the other biographies as well, but there isn't room. Professor Kolle addresses this volume, like its predecessor, particularly to the younger psychiatrists and neurologists that they may become acquainted with the achievements of their great predecessors, upon whose shoulders, mayhap, some of them may one day stand to push outward still further the boundaries of knowledge.

C.B.F.

BASIC ISSUES IN PSYCHIATRY. By Paul V. Lemkau, M.D. (Springfield: Charles C Thomas, 1959, pp. 106. \$3.50.)

This is a book, addressed primarily to general practitioners, which opens a perspective that many busy psychiatrists have lost sight of in their preoccupation with problems immediately at hand. It comprises a series of lectures, given in a post-graduate program, sponsored by the American Academy of General Practice. They were correlated with a series of lectures on internal medicine and pediatrics. The author makes some tantalizing references to the contribution of his colleagues in his discussion of his own concepts of basic psychiatric issues.

The author, trained as a psychiatrist, is Professor of Public Health Administration at Johns Hopkins University, and is in a unique position to furnish the reader with refreshing and provoking glimpses of what psychiatry is doing and where it may be going. Dr. Lemkau's method of doing this is disarming. His style may seem a little bewildering and too innocent to the beginner, but around any corner, one may come upon a few simple statistics, garnered from unexpected places.

¹ See also Kolle: *Konzepte und Fäulnis Beitrag zur neueren Geschichte der Psychiatrie* (Stuttgart: Georg Thieme Verlag, 1957, pp. 88. \$1.80.)

which are startling and thought provoking. A good example concerns the findings of a psychiatrist who was general practitioner for 4 years during the war, to a village of 2,500 in northern Norway. Other equally startling items suggest the possibility that psychiatrists will soon have to face a very real problem as to where the boundary lines of psychiatric practice should be drawn.

Basic Issues In Psychiatric makes no pretense of being exhaustive and is therefore easy to read. This reviewer would like to read it again, supplemented by a perusal of some of the bibliographical references to work already done and in process of completion. It would make him a wiser clinician and a more challenging teacher.

WILLIAM G. YOUNG, M.D.,
University of Vermont.

PSYCHIATRIC ARCHITECTURE. Edited by Charles E. Goshen M.D. (Washington: the American Psychiatric Association, 1959. pp. 156. \$10.00.)

This book presents selected materials produced by the Architectural Study Project established in 1953 under the joint auspices of the American Psychiatric Association and the American Institute of Architects. The aims of the Project were to develop effective communication between the professions of psychiatry and architecture, and to define the basic principles which determine good mental hospital design.

It is apparent from the first 5 papers and from other comments throughout the collection that a considerable number of the contributors conceived the goal as the development of architectural design that would have a positive therapeutic effect on the patient.

There is considerable comment on how the patient perceives space and the arrangement of space, how he is affected by colour, sound, odour, and texture, and how personal interaction is hindered or facilitated by the arrangement of space and furnishings. However, the comment is largely speculative. Many questions are asked but few are answered. The papers describing actual units are not closely related to these theoretical discussions but adhere to the more familiar and less speculative approach which seeks chiefly to provide unobtrusive surroundings which will not interfere with the therapeutic process, avoiding traditional institutional characteristics. Although it is only mentioned once or twice, the reader feels the implication that the concept "hospital" now conveys too much of illness, regimentation and

limitation, and that it is being replaced by "home," "hotel," or "country-club."

One quality of design universally approved but not adequately discussed is "flexibility." The description of "transitional spaces" in the article on Chestnut Lodge is worthy of note.

Personally, I enjoyed the speculative and theoretical discussions as well as provocative concepts and phrases such as "facilities for inactivity." For the more practical there are helpful lists of requirements and general specifications, descriptions of layout and equipment, and "A Check List for Mental Hospital Planning." However, in no sense of the word can this book be considered to be a manual of hospital design.

To round it out there is a 23-page article on "Mental Health Programs and Facilities in Europe and Asia" illustrated by 45 colour prints, which perhaps only confuses a seeker for the "right" pattern by showing what variety exists.

Two glossaries on "Mental Hospital Terms for Architects" and "Building Terms for Mental Hospital Administrators" will be of interest to the uninformed.

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HANDBUCH DER NEUROSENLEHRE UND PSYCHOTHERAPIE. Edited by Viktor E. Frankl, M.D., Victor E. Freiherr von Gebsattel, M.D., and J. H. Schultz, M.D. (Munich and Berlin: Urban & Schwarzenberg, 1958. Parts 1-7, DM 19,-\$19.50, 14,- 15,- 21,- \$18.50, and 20,-)

The *Handbuch*, to be published in 5 volumes, each about 750 pages, will first appear in parts (*Lieferungen*), unbound. Each part will comprise up to 160 pages, and the contributions will be monographs. The entire field of the neuroses and psychotherapy will be treated, from the individual points of view of the authors; however, controversial questions will be treated by two authors differing in point of view. The editors of the *Handbuch* believe that there is such a thing as a common basis underlying different views, and that it is the common basis on which psychotherapy will be built in the future.

Part 1 is devoted to the "suggestive methods" giving a comprehensive survey of the varied views on this method. Bernard Stokvis, one of whose two contributions is annotated by no less than 370 references in the bibliography, reports on various suggestive and auto-suggestive methods, including less known but

and details such as *rationelle* or *pragmatische* auxiliary aids. In his other contribution, Schvin considers experimental-psychological matters relating to hypnosis, which go beyond the author's own recently published textbook. Of particular importance seem to be the psychosomatic aspects and the possibility of a clinical hypnosis. Ernst Kretschmer presents his two-way "standard method" (a combination of analytic and suggestive methods), which conceivably could constitute the psychotherapy of the future, particularly in short-term psychotherapy. His son, Wolfgang, writes on *Protrepik*, which combines all those methods that free the patient from his neurotic *Fehlhaltung* (disturbance) through sensory and verbal stimulation. The characteristic of this method is the *Dressur* of the patient. For instance, electric currents are used in treatment, and certain successes have been reported in cases of hysteria. Betz speaks about *meditative* methods, particularly the *Bildstreifen denken*. Certain combinations of pictures are transmitted to the patient in a motion-picture form while he is "relaxed". The author thinks that this method is not used widely in Germany, and this reviewer wonders where it is used "widely." Erwin Stransky contributes his well-known *Subordinations-Autoritaets-Relationstherapie*: the therapist appeals to the will of the patient first. However, it cannot be assumed that today's crop of therapists like this type of therapy (or, for that matter, *Protrepik*), as it runs counter to the transference relationships between therapist and patient, which are most in demand today.

Part 2 contains an excellent contribution by Strumpf on "Heredity and Neurosis." The controversial subject of the heredity of the neuroses is handled in a new way, including the experiences of those psychologists who experiment with animals. Unfortunately, the author did not take into consideration Rene Spitz's research on the origin of neuroses in infants. Wolfgang Kretschmer writes on "Neurosis and Constitution" much in the same way as his father, Ernst, has taught this subject for many years, but Wolfgang treats the subject more comprehensively and brings the possibilities of the *Konstitutionsforschung* up to date. Birkmayer tells of the "vegetative syndromes" and stresses the pathogenetic and individual factors. He differentiates between a "sympathetic hypertony and hypotony" and a "para-sympathetic hypertony and the vegetative ataxia," which, according to Birkmayer, interacts in the disturbance of coordination and the vegetative regulation. Of particular

interest to this reviewer are the 3 contributions by Freiherr Victor von Gebhardt on the phobic, the "anastasic" and the depressive *Fehlhaltung* (disturbance). The causes of these disturbances are examined philosophically, yet no attempt is made to engage in speculations.

Part 3 is designed to give the reader a survey of the history of psychotherapy and presents the present trend as well as developmental tendencies of individual cultures. Eliasberg writes magnificently on the history of psychotherapy. He asks many questions as about social and psychological causation or "What is Cure?" etc. His contribution is amended by J. H. Schultz, who tells the reader of the historical situation in Europe. Pflanz writes on "Psychotherapy in Central Europe," Reiter on "Denmark," Harding on "Sweden," Johnson on "Norway," Kammerer on "France," and Stengel on "Great Britain."

In Part 4 the trends in Italy are discussed by Cagnello and Cesa-Bianchi, in Spain by Sarro, in Eastern Europe by Voelgyesi, in Russia by Kleinsorge, in China by Otto, in the USA by Hofstaetter; non-analytical psychotherapy in Latin America by Binder, and Psychoanalysis in Latin America by Kemper. For the German reader, the article by Hofstaetter is of the greatest value, as not only is the literature discussed but also critically evaluated. Although the value of Parts 3 and 4 lies in their source material for the German reader, they would appear to have the same value for the English reader, as most of the material, apart from Hofstaetter's article, is nearly unknown in the U.S.A. Thus the reader can familiarize himself with the cultural, ideological, religious, and schismatic differences among the various countries.

Part 5 deals with organismic treatments, such as J. H. Schultz's *Autogenes Training*, which the author invented and which never got a foothold in this country. Instead of reading a voluminous book on this subject, the reader gets the idea in the sometimes hard-to-read form of an abstract. E. B. Strauss and W. F. Coningsby write on narcoanalysis, Lucy Heyer-Grote on breathing-therapy, and our own J. L. Moreno on "Psychodrama," a subject more familiar to Europeans, where it originated, than to us.

Part 6 is partly entitled "Group Psychotherapy" and partly "Psychotherapy in Psychotic Illnesses." The former contains 2 articles by A. Friedemann, in essence equating group psychotherapy with sociogram and psychodrama à la Moreno (with which many

American group psychotherapists will take issue), only to a small degree taking cognizance of non-psychodramatic methods in group psychotherapy, particularly the psychoanalytic method, today perhaps the most widely practised approach in group psychotherapy in the U.S.A. The author does not avoid personalities, but, so far as the sociogram and psychodrama only are concerned, presents these methods founded by J. L. Moreno in an easily readable style.

The balance of Part 6 is devoted to the Psychoses,—R. Kraemer, P. Matussek, Victor E. Frankl and J. H. Schultz sharing the honors. J. Segers contributes a special article on the "Possibilities (of psychotherapy) within the frame of *stationaer-psychiatrischer Behandlung*" in institutions.

Part 7 is devoted to *Fehlhaltungen* (disturbances) only, dealing with the perverse, schizoid, paranoid, and impulse types of mental illnesses. The contributors are P. Matussek, J. H. Schultz, W. Th. Winkler, and H. Giese.

All told, the present endeavor is probably one of the most ambitious ever undertaken in neurology and psychiatry. This work also attempts to be as comprehensive as possible, but falls short in the eyes of many American readers because of the wide diversity of approaches and points of view. Nevertheless, comprehensiveness (in my opinion) can seldom, if ever, be satisfactorily achieved. Looking at the first 7 parts, one can only be amazed at the richness, immensity of outlook, and newness of territory. Almost any American reader will be glad to know that there is such an encyclopedic reference that will answer almost any question known to date to the medical and psychological researcher, practitioner, and student.

HANS A. ILLING,
Los Angeles, Calif.

80 PUERTO RICAN FAMILIES IN NEW YORK CITY. By Beatrice Bishop Berle, M.D. (New York: Columbia University Press, 1958. \$4.75.)

In a period when sociology and anthropology have become almost as heavily burdened by abstruse terms and cliché references as psychiatry, it is most refreshing to come upon a really unpretentious piece of scientific writing. Medical education, too, has been criticized because it tends to teach all about rare and complex diseases and neglects "the problems of every day life"; this little book may help restore the balance.

A physician and a small group of helpers

set up medical practice in a slum inhabited mainly by Puerto Ricans and settled down to give service and, by thus earning the opportunity, to make observations on how the patients and their families live, subsist, relate to each other and to the social institutions around them. While considerable attention is given to disease and its effects, the book contains much more: the advantages of emergency room treatment over outpatient clinic attendance, the balancing of values of a good set of teeth compared to loss of time at work, the usefulness of one religious denomination as compared to another, the issue of how to change from white to blue collar class without loss of dignity or face. These and many other problems were posed by the 80 families who came under observation. Sometimes the problems were solved satisfactorily, sometimes there was continued and dismal failure. The sympathy and sensitivity with which the observations were recorded indicates that the author was able to achieve a genuinely non-judgmental attitude that allowed her to get facts rather than defenses.

There are few generalizations suggested. This is a descriptive study, not an analytic or synthetic one. It was associated with an anthropological study on a larger scale and had careful controls and checks on the observations made, but in the writing of this book we see only a perceptive clinician, not an obsessive theorist or one who needs to formalize her wisdom too much. It is a refreshing and humanistic study, real, down-to-earth. Anthropology and sociology need more like it and medical education needs them, too.

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LA FORMACION ESPIRITUEL DEL INDIVIDUO. 4th Ed. By *Honorio Delgado*. (Barcelona: Editorial Científico-Médico, 1958, pp. 197.)

The author surveys briefly the various schools of psychological thought: the experimental, reflectological, behavioristic, psychoanalytical, individual, gestalt, genetic and biogenetic. He then describes the physical, mental and emotional developments during infancy, childhood, preadolescence and adolescence. Of particular interest is the "Scheme of physical development of the individual" in table form. This is followed by the study of the mind in the process of formation.

The author treats the problem of personality from the viewpoint of a religious moralist with little attention paid to the dynamics of behavior as understood presently in modern texts.

"Culture is human life guided by spiritual value." He also ascribes determining influences to "blood and race," a theory that recalls the much discredited racism. "Faith and tradition" are extensively used throughout the book, but specific psychological and theological definitions of these terms are not given.

HIRSCH L. GORDON, M.D.,
New York City.

THE BORDERLAND OF EMBRYOLOGY AND PATHOLOGY. By R. A. Willis. (London: Butterworth & Co., 1958, pp. 660. \$18.00.)

The most fascinating book I ever read in anatomy was Sir Arthur Keith's *Human Embryology and Morphology*. It is the only book of its kind I know which reads like an exciting detective story. When, then, I read Dr. Willis' statement that Keith's book had long excited his interest and admiration, and that it was this work that brought him to England to study under Keith, I was prepared to find a book as informative and readable as Keith's—and I was not disappointed. This is an altogether thoroughly admirable book in every way. A pathologist with a natural desire to know the reason why, Dr. Willis here brings together the estimable results of his researches, reading, and reflection to give us what is probably the best account in any language of the conditions during development productive of pathology in man. Every aspect of the subject is covered, and almost all the many original illustrations are from the author's own preparations. There are excellent chapter bibliographies, and a good index.

The attractiveness of the book is such that it should gather a wide variety of readers within the charmed circle of its pages, for it deals with no less than the matter of human development, and what may go wrong with it morphologically. And anyone interested in man, ought to be interested in that. Dr. Willis can be recommended as the perfect guide to morbid developmental embryogenetics.

ASHLEY MONTAGU, Ph.D.,
Princeton, N. J.

EXPLORATIONS IN SOCIAL PSYCHIATRY. Edited by Alexander H. Leighton, John A. Clausen, Robert N. Wilson. (New York: Basic Books, 1958. \$6.75.)

SOCIAL PSYCHIATRY IN ACTION. A Therapeutic Community. By Harry A. Wilmer. (Springfield, Ill.: Charles C Thomas, 1958. \$8.75.)

Neither the term "social psychiatry" nor its

concept appears to be native to this country; while social psychiatry is not a new method, it is an innovation here. There are several reasons for this reluctance of American psychotherapists (as contrasted with European, particularly English, colleagues) to adopt this method in this country. For one thing, "social psychiatry," especially as applied to a therapeutic community, denotes the treatment of a relatively few patients within a specially created setting, no matter how closely related to the "real" community, calls for an expensive outlay on buildings and personnel. Social psychiatry in therapeutic communities, therefore, is nearly non-existent in this country, and the few experiments made with this method, such as undertaken by S. R. Slavson, Fritz Redl, and Bruno Bettelheim, made "headlines" in professional circles because of their uniqueness.

The present volumes published simultaneously may indicate a changing attitude toward the treatment of the mentally ill, transferring it from the doctor's office or the hospital's ward to the community. The first book, *Explorations in Social Psychiatry*, has 18 contributors. The collection is uneven, since some of the contributors write about such topics as "Adolescent Drug Use" without really integrating the subject with social psychiatry. In addition, the editors, in a brief footnote, observe that social psychiatry has "somewhat" different meanings in America and abroad. Their own definitions are, in this reviewer's opinion, incorrect, inasmuch as the term "social psychiatry" is an imported, and not an indigenous, term, which most certainly cannot be applied to industrial and forensic psychiatry, as the editors think it can; on the other hand, group therapy, which the editors feel is practised here but not abroad, cannot be isolated from the imported concept of social psychiatry since the latter was derived from group therapeutic concepts, and is the underlying method common here and abroad.

However, the value of *Explorations* appears to this reviewer to be immense. The contributors speak of a "community" (not *the* community), a township, which makes mental health programs possible whether through taxation or through voluntary efforts, such as chest drives. The "therapeutic community" is nowhere mentioned. Yet, the trend toward the tendency to consider the therapeutic needs of the individual beyond those needs which he has as a patient is evident everywhere. The editors have set themselves the task of examining 5 aspects: 1. The prevalence of mental illness. 2. The need for a concept of mental

illness, 3. The relation of mental illness to social pathology, 4. Socio-cultural changes, and 5. Personality development. It seems to this reviewer that, no matter how social psychiatry is defined, only aspects 3 and 4 are really related to social psychiatry, whereas the others are outside the topic of the book (not, of course, outside the province of psychiatry *per se*). Such chapters as "Health and the Social Environment" are the highlights of the book, and a statement like "some disturbances of mood, thought, and behavior occur as a part of man's adaptation to his social environment," which commonly accepted today, deserves to be explored more widely. Hence, the author's inquiry into the relationships among the 3 variables—social environment, psychological disturbances, and bodily illnesses. The shortcomings of the book (inadequate conception of "social psychiatry," exclusion of previously published material here and abroad and hence omission of credit to the pioneers in this field, the dearth of case illustrations) are more than outweighed by the "explorations" and importations of Continental ideas (even though the editors might deny this) in a field hitherto very little known in America.

Social Psychiatry in Action, on the other hand, has, as its sub-title, "A Therapeutic Community," and thereby already indicates the aspects which it deals with. This book has adequate references (about 700 items) including most of the sources by the pioneers of social psychiatry, such as Bierer, Maxwell Jones, Ezriel, Bion in England; Slavson, Redl, and Bettelheim in this country, to mention a few. The author experimented with his therapeutic community at the psychiatric admission ward at the Naval Hospital in Oakland, California, and the book contains case histories only. He included but little theory and background for the concept of social psychiatry, leaving it to the reader to delve into the sources. It should be noted, however, that the term "community" is used by the author in a different sense than in England (where a community actually is created physically by the establishment of grounds, buildings, etc.) in that a ward of an existing hospital is "set aside" for the purpose of a community. However, as such, this ward community may be a "first," and therefore the "changing society on the ward," the roles of the various therapists (corpsmen, nurses, psychologists, and social workers) and community meetings (almost all based on group psychotherapeutic methods) are discussed in great detail and will enlighten many practitioners as to the employment of

group meetings, spontaneous, face-to-face interaction, and the revelation of hidden "community" tensions, feelings and motives to mention but a few. Therefore this volume will enrich our present literature, as, on the whole, will also the anthology of *Explorations*.

HANS A. ILLING,
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NEKROPHILIE. STRUKTURANALYSE EINES FALLES. By Th. Spoerri. (Basel/New York: S. Karger, pp. 92. Bibliotheca Psychiatrica et Neurologica Fasc. 105, SF 15.)

Karl Bimbaum introduced the concept of structural analysis into psychiatry in 1923. Since that time this concept has been used with a variety of meanings. Spoerri defines structural analysis as the analysing consideration of a case in respect to the real relations within the totality of this case and the elaboration of the particularity of these relations.

The case is a necrophiliac with the diagnosis: dysplastic, schizoid, autistic-eccentric, unintelligent psychopath of depressive temperament with additional depressions. The man, now 33 years old, committed between 1946 and 1953 5 necrophilic acts. He always exhumed female corpses, inspected them—especially the genitals—, cut them up and apparently in one instance made a coitus-like play. The later the delict occurred, the longer had the women been dead and, accordingly, in a more progressed state of decomposition.

The necrophiliac was exculpated in court with the diagnosis schizophrenia which still may be clinically the correct one. He gave the author little insight into his history and inner life. Hence the author had to take recourse to his and preceding observations, to the Rorschach, and to a considerable amount of interpretation. There were a number of suicidal attempts and self-injuries as well as several escapes from the mental hospitals.

The author comes to the conclusion that amorphousness is the structurally essential element in his case. He endeavors to show the "impression of the amorphous" in the man's mimicry and gestures, in his manner of speaking, in his way of experiencing, in his life course, even in his attempts to escape from the hospitals. The amorphousness, in the author's opinion, is manifested also in incomplete distinction between inside and outside and in the sexual desire for the increasing—amorphousness of dead bodies.

An interesting chapter on the literature of necrophilia, including belles lettres is very carefully done. Remarks on the forensic adjudgment are briefly made. In the last chapter

problem it is to replace, i.e. of necrophilia in the broader and of necrophilia in the narrower sense, is discussed at some length.

The author has worked hard to get and to interpret the accessible material. One cannot wonder when and how the cardinal point of amorphousness was taken into consideration. As the author has done his structural analysis with his own self-forged tool, there would not be much sense in discussing details which after all stand and fall with the acceptance of this tool. This reviewer would find such an acceptance easier if there were on one hand more reliable communications of the case available and if not—perhaps mainly due to this lack—the presentation were again and again rather forced. The merit to have published a case of necrophilia—not a monograph on necrophilia as the title of the treatise might make one assume—is despite these criticisms gladly conceded.

There are 3 Rorschach protocols—very helpful certainly—exemplarily directed and interpreted by Roland Kuhn.

EUGEN KAHN,
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PSYCHIATRY AND THE PUBLIC HEALTH. By G. R. Hargreaves. (New York: Oxford Univ. Press, 1958. \$3.00.)

The author has edited his lectures given to the "medical" public for the Health Clark Bequest. This bequest made possible lectureships on the history and progress of Preventive Medicine. Dr. Hargreaves is the first psychiatrist given this honor and his lectures completely justify his selection.

For one unfamiliar in the field of preventive psychiatry these lectures are a must. For those experienced in this field Dr. Hargreaves has brought his freshening insights into the field to help us understand why we are at all concerned about preventing mental illness. Dr. Hargreaves has chosen to start at the beginning and progress to modern times, where we find psychiatry at the threshold of preventing illness and its complications.

Anyone interested in mental illnesses, and physicians who are concerned about the extent of psychiatric disorders in their practices should find in this small volume considerable of interest. Psychiatrists in training would do well to read this book.

The best thing about it is Dr. Hargreave's explanation about how mental illnesses have become a major public health problem and what might be done about this fact.

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PATIENTS, PHYSICIANS AND ILLNESS. Edited by E. Gartley Jaco. (Glencoe, Ill.: The Free Press, 1958. pp. 600. \$10.00.)

This volume is presented as a sourcebook of "behavioral science" in medicine. Most of the 64 contributors, including the editor, are "behavioral scientists." 11 have medical degrees and, of these, 4 are working in or associated with psychiatry. "To the individual who has ever been a patient, or the physician, nurse, medical scientist, or health technician, the contents and orientation of this volume may seem novel, if not unique. As an effort to bring together the writings, research and ideas of representatives of the behavioral sciences on varied aspects of medicine within a single cover, this sourcebook presents a view of medicine not well-known nor often recognized. Because medicine has traditionally had a biological orientation and basis, the entry of the sociologist, cultural anthropologist and social psychologist may seem a strange, if not bold, venture. Indeed, such a view may also feasibly be held by many social scientists. The patient, the physician, and illness itself, however, may be given newer significance and understanding when examined from the perspective of these disciplines becoming known as 'the behavioral sciences.'" This excerpt from the Introduction fairly reveals the general character and theme of the book. Of the 55 chapters the majority have appeared previously in social science, psychological, and similar publications, and at least one in the Journal of American Medical Association. (Be it noted that this volume does not include "Near Life, Near Death, Near God" as published anonymously and given editorial support in the J.A.M.A., 1957, 163: 15, 1358. Nor does anything in the book approach the naiveté of that propaganda to which some medical schools had already succumbed.) The good physician, who, in spite of appearances, must always be acutely conscious of many other deficiencies than this book implies, will find little that is actually novel or unique in it. Indeed, some of the contributors point out that much of what they have to say is self-evident or well known and that some of their views need further evidence to support them. It is suggested that further courses in behavioral sciences should be included in the medical curriculum. But surely such material, if sufficiently established or worthy of investigation, is the type that the student should best learn—along with its limitations as well as the limitations of other material—from a good clinical instructor rather than from formal courses; the good clinical instructor does

recognizes that much or most disease is related to heredity and environment in its broadest sense—social milieu, cultural factors, mores, personal associations, circumstances, problems, etc. Better understanding of that relationship as of all problems of medicine, without any exception, is, of course, urgently required but the discursiveness of this book—analysis of health, illness, patient, student, physician, nurse, hospital, community, etc.—would seem to militate against that objective rather than advance it.

About 50 pages are devoted to reference matter and bibliography combined and 5 pages to explanation of terms used in the behavioral sciences. There are not many but a few typographical, spelling or grammatical errors, such as cardiac "infection" for infarction, "prosecuted" for persecuted, "sited" for cited, each "have" for each has.

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THE PSYCHOLOGY OF EARLY CHILDHOOD. By *Catherine Landreth, Ph.D.* (New York: Almed A. Knopf, 1958, \$8.75 trade—\$6.50 text.)

This book is a survey of present-day knowledge concerning the development of child behavior to the age of 6 years, written in a form which makes it suitable for use as an introductory college textbook on the subject. The author, who is Professor of Child Psychology and Director of the Institute of Child Welfare Nursery School of the University of California in Berkeley, has drawn upon her experience and perspective both as investigator and teacher in the field of child development to present in a clear and interesting way basic psychological concepts which are needed in the educational background of such professional disciplines as nursery school and kindergarten teaching, clinical psychology, family and child social welfare work, nursing, pediatrics, and child psychiatry.

Oriented toward the results of research, the text gives representative experimental data on which generalizations in child psychology have been made, drawing, to some extent, from the pediatric and psychiatric as well as, more extensively, from the psychological literature. Conclusions drawn are commonsense and, although areas for needed research are indicated, there is a minimum of theorizing and speculation to fill the many large gaps in current knowledge.

The subject matter is clearly outlined. Each chapter begins with a few questions designed to stimulate the student's selective interest and

ends with a brief review of the salient conclusions. The text is well supplemented with figures (105), tables (17), and brief illustrative examples. At the end of each chapter, there are a small number of carefully selected recommended readings, often some recommended films, and usually about 2 to 4 pages of references.

Beginning with a brief review of "The Origins of Child Psychology," the body of the material is organized under the following chapter headings: "Prenatal Origins of Behavior," "Behavior of the Newborn," "Motor Behavior," "The Development of Language and the Function of Speech in Early Childhood," "Emotional Behavior," "Social Behavior Toward Age Peers," "Perceptual and Adaptive Behavior," "Developmental Factors," "Learning Processes," "Mental Functioning," and "The Child's Interaction with his Environment." The book ends with a discussion of the "Problems Inherent in the Study of Human Behavior," mentioning the restrictions involved in the use of the experimental method in the study of human subjects, suggesting the kind of data that can be obtained on child development and behavior as a natural science, and indicating the immensity of the task ahead in the development of the field and the need for a multi-discipline approach.

Although the generalizations in child psychology contained in this book are applicable to the understanding and regulation of the development of the individual child, their use in the diagnosis, prognosis, and treatment of behavior disorders is outside of the scope of the material presented. The book is concerned, largely, with normal development rather than with clinical problems, although the "normal" includes a wide range of deviations. Psychoanalytically oriented child guidance personnel will find much of the theory on which their dynamic formulations and treatment are based either only briefly mentioned or, in some instances, rejected as unsupported by rigorously obtained statistical data. There has been no attempt in this book to fit the various aspects of child development into any one-theory structure or into an integrated system of concepts.

It is the reviewer's opinion that not only will teachers and other professional workers responsible for the care of young children find this book a good introduction to the psychology of early child development and a useful reference resource, but also that nurses, medical students, and physicians who are not well grounded but are interested in the growing literature in the field will find it interesting

profitable reading. The vocabulary and style are not at all formidably technical, but the scientific standards maintained in the selection of material in a relatively recent, complex, controversial, and burgeoning field of knowledge have been high.

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THE PSYCHOLOGY OF MEDICAL PRACTICE. By Marc H. Hollender, M.D. (Philadelphia and London: W. B. Saunders Company, 1958, pp. 276.)

Contributions by a psychiatrist, an obstetrician, a pediatrician, and an internist are included in this monograph. There are two chapters on the doctor-patient relationship which unfortunately begin with a categorization of this relationship into 3 types; and many physicians, only barely initiated dynamically, may not find the terms "activity-passivity," "guidance-cooperation," and "mutual participation" too meaningful. The author adds that there is no one particular type of relationship that is best, but the model chosen should be most appropriate to the given situation.

The second chapter on the practical aspects of this relationship between doctor and patient makes a number of points which bear close reading, such as: the need to understand the purpose, function, and the fears that provoke reactions to an illness, and how unserviceable the concept of "good" and "bad" is when applied to such reactions. Also covered are the shortcomings of a "normal" and an "abnormal" in evaluating behavior, and the error of too great stress on whether a pain is "real" or "unreal." In discussing the motivation of a patient's visit, the author points out that in many cases "... the 'real reason' will be revealed only as the patient gets to know you and is sure your attitude is sympathetic."

The section dealing with the cancer patient stresses the need to individualize one's approach to the patient, and the benefit of being told the diagnosis by a physician known to the patient rather than by a comparative stranger. A quotation from an article by C. S. Cameron on the management of the terminal patient certainly merits attention.

Several discussions in the chapter on obstetrics (by E. M. Solomon, M.D.) make excellent and informative reading for psychiatrists, for instance: "Clinical experience amply attests to Reynold's statement that women do not necessarily like to be pregnant and often deeply resent pregnancy" but adjust to it as the condition continues; and the patient not infrequently tells the obstetrician she is op-

posed to breast feeding, and a strong aversion or revulsion against the process may exist. The approach to natural childbirth and keeping the baby with the mother certainly offers the first 24 hours are refreshingly practical, since it is pointed out that both approaches are excellent for some patients but not indicated for others.

The section on pediatrics (by J. B. Richmond, M.D.) is equally well written. The value to the physician of seeing the family in a more spontaneous situation during a house call, the value of listening, and a thorough examination in relieving anxiety, and the need to avoid glib reassurance are stressed. He points out that troublesome areas may not be mentioned and that the mother's real feelings may not be in keeping with what is at first expressed. Finally, the problems faced by a parent whose child has a malignancy are described and realistic suggestions are offered.

There is also a chapter on the medical patient, in which coronary heart disease, diabetes mellitus, and cerebrovascular accidents are considered.

The careful reading of this material would certainly aid one in understanding the patient's emotional difficulties. There are also some practical and understandable suggestions on approaching the patient which would be of great value to the non-psychiatric physician.

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THE FEMALE OFFENDER. By Prof. Caesar Lombroso and William Ferrero. (New York: Philosophical Library, Inc., 1958, pp. 313. \$4.75.)

Caesar Lombroso, one of the greats of 19th century psychiatry and psychology, directed much attention to the study of the criminally deranged. However, viewed in light of 20th century understanding, some of his concepts in *The Female Offender* are most inadequate. These include such items as the born criminal, atavism and physiological anomalies, to mention only a few. Nevertheless, Lombroso's speculations found him pleading for a clearer differentiation between the casual and the habitual offender. He also helped inspire a more careful scrutiny of statistics in crime.

Dr. Pirone in the Introduction has written as follows: The present study in criminal biology, which grew out of his collaboration with William Ferrero (although almost a hundred years ago) should be particularly welcome to counterbalance the mainly ana-

logical and psychologically dynamic hypotheses.

This reviewer believes such "counterbalancing" is primarily of value in terms of historical perspective and does not scientifically negate analytical and psychologically dynamic hypotheses of today." Keeping this in mind, *The Female Offender* is a worthwhile addition to all social science libraries.

ARTHUR LEISLER, Ph.D.,

Los Angeles City College

ELECTRONIC INSTRUMENTATION FOR THE BEHAVIORAL SCIENCES. By C. C. Brown, Ph.D. and R. T. Saucer, Ph.D. (Springfield: C. C. Thomas, 1958. \$5.50.)

A product of psychophysiology experience, this small volume is a clearly written digest of an elementary course in electrical theory and application. It is addressed to the sophisticated student. The text includes simplified explanations of recent technical advances as transducers and transistors, as well as circuits for basic instrumentation. Diagrams, appendices, and table of contents are satisfactory. A helpful guide in the initial development of an electronic-behavioral laboratory.

MAX FINK, M.D.,

Glen Oaks, L. I., N. Y.

PSYCHOTHERAPY OF CHRONIC SCHIZOPHRENIC PATIENTS. Edited by Carl A. Whitaker. (Boston: Little, Brown and Co., 1958, pp. 219. \$5.00.)

The prospect of reviewing a 3-day conference, which often extended into the wee hours of the morning, might in itself be overwhelming if it were not for the inherent promise of help and encouragement in the treatment of chronic schizophrenics. The report of the conference of October 1957 is made up of a review of the 8 sessions and a summary. Each session is moderated by one of the participants. The most unusual feature of the book is its informality. Eight experts in the field of psychotherapy, 7 of whom were practicing psychiatrists and one an anthropologist, were encouraged to discuss in a matter-of-fact way their views on this subject. The interchange was recorded and later reviewed by each contributor, so that spontaneity is preserved.

The first chapter, Diagnosis and Prognosis, moderated by Malcolm L. Hayward of Philadelphia, begins with the happy approach of using treatability as an operational diagnosis. Though Hayward is worried lest the reader find this chapter confused and disorganized, the sophisticated student will have more of a

feeling of amused toleration and realization that others like himself, are overwhelmed by the complexities of this disease. On the basis of the abilities of the therapist, at least a grouping of schizophrenia is deemed possible.

The next chapter, Schizophrenic Distortion of Communication, moderated by G. G. Bateson, is a record of a lively interchange on the patterning of schizophrenia. It ends with a delightful illustration of the schizophrenic mother and her effect upon others in her environment. It also points up the argument about whether schizophrenia is an illness or a learned way of functioning. The mother had more of an effect on the narrator of the story than he realized.

In the chapter on Orality, moderated by Carl Whitaker, the group is unable to define oral deprivation. In any case, Whitaker believes that schizophrenia is more complex than oral deprivation. He postulates 3 possible factors in the etiology of this disease: (a) deprivation of closeness; (b) a noxious ingredient; (c) a lack of remedial life experience. All participants agree that the therapeutic processes involved do not lend themselves to "simple technical rules."

Anality is moderated by John Warkentin, who opens with the psychotherapeutic truism that "replacement therapy" is not enough. Also, that both in the etiology and treatment of schizophrenia major factors become operative after the oral period of psychosexual development. In this section the preoccupation with the schizophrenogenic mother is abandoned. The aspects of anality-control, guilt and aggression raise the image of the father. Warkentin says that it is all right to let the patient "win" when the therapist is paternal, but that he should not be allowed to win when the therapist is "maternal." Allowing the patient to win when the therapist is maternal may even increase the risk of suicide. Does indifference in the therapist express accumulated deep anger and isn't it expressed exactly the same way as indifference in the schizophrenic patient? The etiology of schizophrenia then does not only depend on the failure of feeding by the mother, but also on the failure of the father to assume his masculine control. The therapist must first establish a firm masculine contact to overcome the patient's stubbornness. The patient then regresses to an oral level where he can accept the therapist's maternal function. There are advantages of multiple therapy and group therapy in this connection. Also, flatness and indifference on the part of either the patient or the therapist represents an impasse in treatment.

ness and health, or an alcohol or motor car is a matter of public values. The nation can afford to spend more on mental illness if it spends less on something else. The investment of more money in direct costs may reduce the indirect costs to the point where the total bill is reduced.

Suggestions as to what should be done in order to make an accurate accounting of the costs of mental illness possible are included in the study.

For those interested in the statistical dimensions of mental illness, this is an excellent report and a valuable reference.

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A TEXTBOOK IN RORSCHACH TEST DIAGNOSIS.

By Ernauld Bohm, Ph.D. Translated by Anne G. Beck, M.A. and Samuel J. Beck, Ph.D. (New York: Grune and Stratton, 1958, pp. 322, \$7.75.)

Doctor Bohm, a keen exponent of the Rorschach as a clinical tool, gives us a complete description of present European principles and practices as regards this instrument.

Students will welcome the reformulation of principles of personality vital toward understanding the rationale of the Rorschach. This is done with regard to types of personality in relation to clinical pictures. There is also a refreshing exposition on the meaning of separate variables, more fully than this reviewer has hitherto seen in the English literature.

The Becks have done an excellent job in translating this volume from the German. Readers will also profit from the various interpretative leads, points of departure for research and coverage of the literature.

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HEREDITY COUNSELING. Edited by Helen G. Hammons. (New York: Paul B. Hoeber, Inc., 1959, pp. 112. \$4.00)

In the whole of the United States there are only about 20 institutions to which the individual in search of genetic counseling can go for advice. The truth is that everyone contemplating marriage and the raising of a family requires some help in resolving questions of hereditary transmission, for human beings are the carriers of many deleterious genes, and

the "normal" fitness of a population is simply, as Dobzhansky and Wallace have pointed out, an average expression of a multitude of genotypes all riddled with deleterious recessive genes.

If the fitness of human beings is to be improved, some attention should be given to the problems which are likely to arise in a system characterized by random mating such as ours. Philosophers are not yet kings, and even geneticists don't know a large number of the answers to the questions they are asked, but one thing is certain, and that is, that many tragedies could have been avoided for countless numbers of human beings, had heredity counseling been available to them.

In the present small volume, 17 experts with experience in heredity counseling pool their knowledge, and underscore the importance of an area of theory and practice which sorely needs development. The volume, which is issued under the auspices of the American Eugenics Society, contains several original contributions, in addition to the more general discussion of the structure and functions of a heredity counseling service.

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CLINICAL NEUROANATOMY, NEUROPHYSIOLOGY AND NEUROLOGY. With a Method of Brain Reconstruction. By Louis Hausman. (Springfield, Ill.: Charles C Thomas, 1958. \$9.75.)

This work represents a concise, integrated and comprehensive approach to clinical neuroanatomy, neurophysiology and neurology. Based upon amplification of the method of teaching originally described by Adolf Meyer, it combines the study and simultaneous reconstruction of a three dimensional model of the nervous system. The text is illustrated by plates and tables and is to be employed in conjunction with the author's Atlases 1 and 2 published by Charles C Thomas. The material presented has been used for many years at Cornell University Medical College and New York University Medical College. The author's efforts to integrate basic science with clinical application have been successful. The type is clear, the style lucid and the presentation logical. This book should be useful to teachers and students of neurology, neuroanatomy, and neurophysiology.

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OXFORD: R.M.P.A. MEETINGS



Dr. Thomas P. Rees, Past-Pres. of the Royal Medico Psychological Association, Dr. Robert W. Armstrong, Pres., RMPA, Dr. Henry P. Laughlin, Representative of the American Psychiatric Association, Dr. Alan B. Monroe, Sec'y, RMPA and Dr. L. C. Cook, F.R.S.

EUROPEAN PSYCHIATRY : ENGLAND, DENMARK, ITALY, GREECE, SPAIN, AND TURKEY

HENRY P. LAUGHLIN, M.D.¹

In view of increasing interest in world medicine it seems appropriate to publish the following notes concerning medicine and psychiatry in 6 European countries. They are summaries of information, secured on a recent world tour in which I represented the American Psychiatric Association.

Statistics included were furnished by leaders in the various countries. Comments and opinions expressed are theirs or the author's, and do not reflect official attitudes of the Association. Certain findings relating to Asia and the Middle East have already been published (1, 2, 3).

ENGLAND

PSYCHIATRY IN MEDICAL TEACHING

Most psychiatrists seem to agree that psychiatric teaching needs to be strengthened in the medical curricula. This objective presents many problems. These include: (a) the difficulty of modifying established tradition, (b) the relative indifference of other physicians, (c) bureaucratic unwieldiness inherent in the National Health Service, and (d) difficulties in securing funds.

The General Medical Council presently requires in the standard medical school curriculum a minimum of only 8 lectures on normal psychology, and a mental hospital course of two months. There is no formal requirement with the hospital course for systematic lectures or for examinations to be taken. The average undergraduate teaching in psychiatry takes place in 3 months of the last year, with attendance required at regular lectures two to three times per week. A total of approximately 12 hours is spent in visiting mental hospitals. The amount of time and interest given to psychiatry is slowly growing but could stand substantial increases in many schools. There are 30 physicians from the United Kingdom

enrolled in American psychiatric residency training programs.

The medical school teaching of psychiatry has been improving. Six medical schools—Leeds, Sheffield, St. Andrews, Durham and Glasgow—have added chairs of psychiatry since World War II. Edinburgh has the oldest chair (60 years). There are also full chairs at London (Maudsley), Manchester and Aberdeen, but not as yet at Oxford, Birmingham, Bristol, Liverpool, Cambridge or the University of Wales. There is, however, a Department of Psychological Medicine in each medical school.

The future development of psychiatry in England has certain problems which are closely tied to its relative level of prestige among the medical specialties, and to its status in medical education. More psychiatry should be taught, but medical curricula are firmly established, and changes are difficult to secure. Evolution and development of medical teaching in England tend to be slow and deliberate. Tradition carries great weight and physicians generally have little interest in psychiatry. One may hear this kind of attitude expressed, "My schooling was fine; it serves me well enough, why change it?" Or, "What need have the new doctors for more psychiatry?"

Money has been hard to get to establish new chairs of psychiatry. The relatively low level of prestige of our specialty in medicine generally, helps maintain a kind of vicious cycle. Thus, in medical school, too few students become really very familiar with psychiatry; as a consequence fewer choose it as their specialty.

This means fewer physicians in later life who understand psychiatry or are sympathetic to its problems. All of this becomes of even more moment when today's graduates are later serving in important administrative positions or secure appointments as deans of medical schools. Also fewer psychiatrists means a smaller and less potent psychiatric group to press for con-

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structive changes. We are by no means entirely unfamiliar with these problems in North America.

Some psychiatrists blame the unwieldiness of the National Health System for restricting change and development. Inevitably an interest in politics may become necessary even for physicians with little such interest. Thus one prominent psychiatrist, deeply concerned with the need for more medical teaching in our specialty, discussed with me hopefully an M.P. who has an active interest in psychiatry—his hope being that the M.P. might be willing to bring his influence somehow to bear to secure some increased teaching time for psychiatry in the medical schools.

NATIONAL HEALTH SERVICE

I soon found that discussion of any aspect of medical practice is not likely to proceed far before the very considerable impact of Great Britain's National Health Service becomes most evident. This is certainly true in psychiatry. The overall effects on our specialty have been quite mixed in the 11 years since this program began operating in 1948. These are neither all good, nor all bad.

Dr. A. B. Monro, the Superintendent of Long Grove Hospital, Epsom, Surrey, a distinguished recent guest in the U. S. A., and the Hon. Secretary of the Royal British Medico-Psychological Association, with others helped to outline some of the important consequent trends in British psychiatry.

First, there is less isolation of the mental hospitals and their staffs from their communities. Staff members are busier acting as consultants, working in outpatient clinics, and in visiting patients in their homes and in general hospitals. There are increasing efforts on the part of staff and community to make psychiatry and the mental hospital more of a community activity and responsibility. Secondly, the taking of the mental hospitals out of local control has effected great improvements in some instances.

Thirdly, there are the equalizing effects of N. H. S. care. The available facilities in psychiatry are now more standardized. Further, pay scales and consultant status in the provincial hospitals are now comparable to those in the metropolitan centers. Indi-

vidual competition among specialists appears somewhat lessened. Finally, there is gradually more teaching of psychiatry in the medical schools, although, as already noted, improvement proceeds slowly and schools vary a good deal in their approach, and in the calibre of psychiatric instruction.

On the other hand, there is much less private practice. High income tax rates discourage practice after official hours and few psychiatrists can stay outside of N. H. S. A standard level of pay is given for hospital and teaching work, previously largely unpaid or only by honorarium. However, this also lessens the interest in private practice.

From the standpoint of the administrators and the hospital superintendents this all has its advantages. According to their view, N. H. S. "has stopped the drain of psychiatrists away from hospitals into private practice." They have more adequate staffs both numerically and selectively.

Finally, in view of the tax situation, it is very difficult for a psychiatrist to top an annual income of three or four thousand pounds (\$8,400-\$11,200) from private practice, or any other source. His full time consultant's pay through N. H. S. can reach this without supplemental income from private work.

Some patients have doubts about medical opinions for which they do not personally pay. This appears more common on the provincial level than in metropolitan London, for instance. It does not seem to be a major problem in N. H. S. operations.

Some 600 psychiatrists have consultant status with N. H. S. While such services can be on a full or part time basis, the majority are full time and salaried. In summary, it seems that the greatest benefits have accrued to the mental hospitals. Individual initiative, the availability of private care, private practice and psychotherapy have suffered.

ADVANCE NATIONAL PLANNING INDICATED

Several of our British colleagues urged that I convey a friendly but serious warning to American physicians. Should a National Health Service ever impend in North America, physicians and psychiatrists should actively undertake advance planning on a responsible and national level immediately.

By this means two of the greatest difficulties might be somewhat mitigated: 1. The inevitable initial disorganization, and 2. The great difficulty and red tape which they have found upon attempting to secure any changes or modification of rules and regulations once established, no matter how early afterwards these might be sought, or by whom.

A detailed plan of operation offered by a national group of specialists is likely to be most welcome initially if at all equitable. Later, the most careful recommendations may carry little weight. Should we fail to act thus collectively, constructively, and in advance, then we "jolly well deserve what will most certainly transpire!"

THE R.M.P.A.

Most psychiatrists in Great Britain belong to the Royal Medico-Psychological Association. Its members number some 1500 specialists, 75% of an estimated 2000 psychiatrists. The papers presented at the meetings were intriguing as to the subjects selected and the resulting indications for current British psychiatry.

It was possible to exchange information with noted colleagues from other countries at these meetings, including Dr. Tsung-yi Lin, Chairman of the N. & P. Department at National Taiwan University Hospital(1), Dr. Bor F. Nilsson of Stockholm and Dr. Harry Stokhom of Risskov, Denmark.

DENMARK

Denmark, largely agricultural, has about 4½ million people (nearly one-fourth in Copenhagen). Medicine and psychiatry in Denmark as in England are profoundly influenced by a National Health Service. Some 77% of the people are covered. The Danish N. H. S. has both advantages and disadvantages, as do many aspects of this semi-welfare state.

On one side, there is little real poverty in Denmark. Living conditions are good, with ample food for all. Education is generally available: anyone can attend the university if he has the ability, and the family will pay some slight costs. The lower schools are good, as are hospitals, and general medical care is available to anyone at modest cost.

Details of the Danish Health Service are less well known than those of the N. H. S. in England. A patient who needs psychiatric care consults his psychiatrist by referral from his general physician. Under Health Service he pays a single annual fee of 60 crowns (\$5.37). This covers one year's care regardless of the time or services involved, and is intended to pay for everything needed from a single consultation to extended therapy. The unfortunate result is that N. H. S. patients are very likely to be seen only once, and then promptly returned to their Health Service general physician for followup and further care. The psychiatrist is simply unable to provide anything like definitive care to outpatients on this basis. The patient pays little for his psychiatric care, but he is also likely to receive very little.

Hospitalization for psychiatric patients works out considerably better when it is required. Three crowns (43c) daily pays for everything—hospital costs, room, medicine, physicians' and surgical fees. A private room raises this cost to 15 crowns (\$2.13) daily.

Under the Service plan a general physician is chosen yearly by the family. The doctor is paid 14 crowns (\$2.00) yearly for each adult; there is no charge for children. The physician can refuse a patient and patients can change their doctors yearly, or in between. Twenty-three percent of Danes cannot enroll at present because of income level restrictions; a top ceiling of about 14,000 crowns is set. Proposed legislation could soon make the service available to all.

Critics of this system point out: 1. Its high cost nationally, 2. Its impact upon individual initiative, 3. Its hampering effect upon private practice, 4. Its restrictions upon making the best level of care more widely available (particularly in psychotherapy), and 5. The growth and influence of bureaucracy. The impact of high income taxes in Denmark restricts interest in private practice as we observed in Great Britain—possibly more. A leading Danish psychiatrist discussed with me his annual income of 35,000 crowns (\$5,000) as a half-time Department Head. He earns an additional 35,000 crowns from his private prac-

tice. From this combined income he pays back 35,000 crowns annually in income taxes.

Because of certain advantages (such as the availability of Health Service) it is claimed that some Danes prefer to keep their income below 15,000 crowns. Above this figure also, the tax rate rises quite rapidly in progressive fashion. Initiative suffers. As a consequence an opportunity for new work, a better job, or extra business sometimes may be turned down flatly, with the comment, "I can't afford it" (to earn the extra income!). According to one psychiatrist, as wealth and spending power lose some of their relative importance to people, prestige of position has become more important in Denmark.

Of the approximately 150 Danish psychiatrists, some 125 are members of the Danish Psychiatric Association (President 1957-59, Professor (of Psychiatry) Villars Lunn of the Copenhagen University Faculty of Medicine). There are two medical schools. Professor Erich Stromgren is department head at the Faculty of Medicine of Aarhus University (Dr. Stokholm, mentioned earlier, is also a faculty member here).

At Copenhagen the 7-year program includes pre-medical education, and upon completion an M.D. degree is awarded, after which one year of internship is required. I visited the excellent University Clinic with Dr. Lass M. Sonne and observed various types of patients. Interesting experiments were in progress on the effects of employing different color combinations for patients' wards. Here there are 120 adult beds and a staff of 19 doctors, with 5 of them qualified as psychiatrists.

In the Copenhagen area are 3 other major psychiatric departments as integral parts of general hospitals: 1. Bispebjerg with 200 beds and 20 for child psychiatry (Head, Dr. Carl Clemmesen, with a staff of 9), and 2. Frederiksberg with 140 beds. Saint Hans Hospital in Roskilde, 30 km. distant is the third. It has 2000 beds and takes cases from Copenhagen for continued treatment.

Other state hospitals with approximate beds are at Brønderslev (400), Viborg (700-800), Aarhus University Clinic (700-800), Middelfart (500-600), Augustenborg (700-

800), Vester Vedsted (200-300), Oringe (600-700), and Nykøbing Sjaelland (1000). Another (private) facility, Filadelfia, has approximately 470 beds for epilepsy and 265 for psychiatry.

Dr. Einar Geert-Jorgensen, Head of the psychiatric department at Frederiksberg Municipal Hospital took me through his well organized department. With 140 beds, 20 of which are for senile patients and a staff of 7, nearly 2,000 patients are treated yearly, only 165 of whom are transferred to other hospitals for continued treatment. The facilities were uncrowded, clean and well equipped. Nurses and attendants impressed me as most courteous, friendly, and efficient. The department seemed to gain substantially from its integration as a major division in a general hospital. Shock was used liberally; in 1956 1,934 ECTs were given.

ITALY

Postwar Italy is a nation of 48 million people of whom about 4% live in the capital city of Rome. Neurology and psychiatry are closely tied together in Italian medical teaching, in clinics and in the private practice of medicine generally. Much of the current work in NP is organically and biologically oriented. Italian medicine historically has had its closest connections with German medicine. This is reflected in the language abilities of Italian physicians, with English running considerably behind both German and French. However, there are now an increasing number of Italian physicians in U. S. training programs in psychiatry. This trend is likely to gradually influence Italian medicine to some extent. Two specialists commented however, that Italian psychiatry today is most nearly comparable with the German psychiatry of around 50 years ago.

Medical interest generally in the existence of possible psychologic bases for the illnesses that we regard as emotional in origin or psychogenic is rather slight. With some noteworthy exceptions, there is likewise little interest in psychodynamics.

There are 1,000 to 1,200 psychiatrists in Italy, with varying qualifications. Some 300 are members of the Italian Society of Psychiatry whose recent president was Profes-

for Ugo Cerietti. The Italian Mental Hygiene Society was organized in 1924 and currently has 400 members. Its president, Dr. Carlo De Sanctis, discussed with me the three major developments in Italian psychiatry which he believed noteworthy since the survey, of which he was co-author (with Dr. Paul Lemkau) was published in the *APA Journal* in 1950(4). These were: 1. More work in child guidance, 2. An increase in outpatient facilities, and 3. A growth in mental health interest. In 1958 the first post-graduate course in child psychiatry was started—a 4-year program sponsored jointly by the Departments of Psychiatry and Pediatrics at the U.D.S. Medical School in Rome.

Dr. Mario Gozzano, professor of psychiatry at the *Universita Degli Studi* in Rome took us through his large university clinic. Here there are 180 teaching beds, to which new building has just added space for 70 patients. The medical students have their clinical training in psychiatry here. In their last year they receive instruction in psychiatry. The children's department under professor Giovanni Bolleo consists of 30 inpatients, an outpatient child guidance clinic in which 10 to 12 patients are seen daily, and a 30-patient daily "school" for cerebral palsy patients.

In a tour of the famous Provincial Psychiatric Hospital of *Santa Maria Della Pietà* outside Rome I saw in the library the most complete collection of psychiatric periodicals seen at any point of two world tours. This hospital with its 2,500 patients is not the largest in Italy, but it is certainly one of the best. Their patient discharge rate is 70%—most of them in the first 3 months. Also at this hospital is a useful statistical division which regularly undertakes the compilation and publication of national data on psychiatric hospitals and patients.

Another hospital for Rome accommodates some 700 chronic patients at Ceccano, 100 km. distant. Other large provincial hospitals are at Palermo (approximately 3,000 patients) and at Genoa (2 hospitals with approximately 3,200 patients).

The administrative management of psychiatric patients in Italy is on a provincial basis and accordingly each province has its psychiatric facilities. Details about these

have been published in Italy and elsewhere and are available to those interested. Evidences of professional progress in Italy are present but scattered. There is much room for growth and improvement and increased support from all quarters—ethical, medical and the public is greatly needed.

GREECE

Greece is an interesting and hospitable country of some 7½ million people, with 20% in the Athens-Piraeus area. Effects upon the country of the many years of war just past are inevitable. There are few Hellenes who do not carry poignant memories of World War II, the Nazi occupation and especially the desperate civil war that was only recently concluded.

Medicine in Greece has many ties to other European countries but particularly to France. While only a few physicians have an excellent command of English and some of German, far more can speak French fluently. An interpreter was accordingly necessary (for most of the audience) during a lecture which I gave at a medical meeting in Athens. Indicative of the joint action possible among medical groups in Greece, this meeting was co-sponsored by: 1. The Medical Society of Athens (3000 members), 2. The Neuropsychiatric Society of Athens (founded 1936, 100 members—President, Professor (of Psychiatry) J. S. Patrikios), and 3. The Pan Hellenic Union of Mental Hygiene (founded 1956, 85 members—President, Professor Alivisatos).

There are two medical schools in this friendly nation, each with a 6-year program. At the University of Salonika the student enrollment runs from about 200 students in the first year to some 100 graduates in the sixth year. At the *Faculté de Médecine* in Athens, Dean Themistocles Sklavounos told me that his enrollment varies from 400 students in the first year to 250 in the sixth. Of his entering freshman, half are from Greece proper while the balance are Hellenes from overseas who are admitted without examination. The B.M. degree is given after the clinical year; while an M.D. can be granted only later after an acceptable thesis and special examinations.

Of approximately 100 psychiatrists in Greece today, three-quarters are in greater

Athens, 10 in Salonika and 15 elsewhere. Most of them have trained in Greece. Those trained abroad have mostly been in France and Germany. This trend has been slowly changing and there are now 20 Hellenic physicians training in psychiatry in the U. S.(5).

Very few doctors do psychotherapy, fees for which generally run between \$4.00 and \$6.00 (U. S. equivalent) per consultation. Standards for medical fees and salaries generally are not high according to those of the American continent. The half-time daily pay for the Professor and Director of the University Department of Psychiatry for example was the equivalent of \$5.00.

Much of our psychiatric terminology has its origin in early Greek, and it was quite natural that I found some Hellenic psychiatrists sharing my own interests in psychiatric philology. A most recent example is that of *ataraxy*, defined as, "a state in which there is an absence of anxiety"(6). This term is derived from the Greek word *ataraxia* literally meaning "non-agitation." At times errors have occurred in the transposition and evolution of our terms. Dr. Demetrios Kouretas, the sole psychoanalyst in his country, pointed out that *scopophilic* is the correct form, *not* *scoptophilic*. He advocates a concept of the *preego* in place of the id.

The common problems of low budgets, need for more trained staff and increased beds are present. U. S. trained Dr. George Lyketos, a Fellow of the APA and Director of Dromokaition Mental Hospital estimated that there are some 20,000 mental patients, of whom those actually hospitalized are crowded into half the required space. The budget for public supported patients runs

the equivalent of 70¢ per day ; at the university clinic the rate is \$3.00 a day. Psychiatric staff members, except for residents, are part-time. In view of the fiscal and other handicaps, the achievements at Dromokaition Hospital are a special credit to its administration. I saw active O.T. programs, patients constructively occupied and subject to very few restrictions, and a generally therapeutic atmosphere.

SPAIN

Spain is less densely populated than other European countries, with some 26 million people, 7% of whom live in Madrid. While tourism is increasing rapidly, Spain is still less on the beaten track than most other European countries. Many living costs there are quite low.

Relatively few Spaniards, lay or professional, understand English. For Spanish physicians the number 2 language is French, and number 3 is German. Both Portuguese and Italian are understood widely and according to Dr. José Germain, Editor of a leading Spanish language psychological journal, either may be used for medical conferences. A trend toward greater understanding and use of English has developed only since World War II. The influence of German psychiatry is as great as in Italy, considerably greater than that of French or English psychiatry, but a little less so now than before the war. There are now almost 20 Spanish physicians in psychiatric training in America.

The Spanish Association of Neuropsychiatry numbers approximately 350 members and includes 90% or more of all Spanish psychiatrists. As we found in Greece, but somewhat less extensively, many psychiatrists

TABLE 1
MENTAL HOSPITALS IN GREECE

Hospital	Patient Census	Psy. Staff	Residents
1. Aegimition, Un. of Athens	190 N. P.	5	2
2. State Mental Hospital, Daphni (Athens)	2500 (1700 beds)	15	15
3. Dromokaition Mental Hospital, Chaidari (Athens)	900	8	7
4. State Mental Hospital, Un. of Salonika	300	3	4
5. State Mental Hospital, Corfu	500	2	4

In addition there are state mental hospitals at Chania on the island of Crete, and at Cephanlonia, each with a few patients, poor facilities and perhaps one psychiatrist.

hold part-time official positions or appointments at various clinics or institutions. We visited Dr. Juan José Ibor at his busy and attractive private offices. Dr. Ibor, who also directs the female side of the psychiatric clinic at the University of Madrid Hospital, is quite familiar with recent work in American psychiatry. There is a fair amount of private practice and of psychotherapy done in Madrid.

There are 10 major universities in Spain, each with a Faculty of Medicine. Each currently has a Professor of Psychiatry or is scheduled to have one at an early date. Since 1946, all students in medicine must have some psychiatry. Usually this is a lecture course with a view of clinical work, lasting 2 to 3 hours a week. No psychiatry is taught in the lower years, and students have the opportunity to receive instruction in psychiatry in their senior year. Dean Jesus Garcia Orcoyan of the *Universidad de Madrid, Facultad de Medicina*, whose school is by far the largest of the 10 faculties, told us that there are currently 1,142 first year medical students in the 10 faculties; of whom 37% are in his school.

It would appear that hospital facilities for the mentally ill are insufficient according to our standards. The University of Madrid maintains an outpatient clinic and provides brief hospitalization for a limited number of selected cases, as do a few other general hospitals. Two privately sponsored mental hospitals at Cienpozuolos are run by religious groups and accommodate over

1000 male and 1000 female patients respectively. Two government hospitals are worthy of note: one near Madrid has 400 to 500 patients, one at Saragossa has had a program of O. T., reported to be continuously operative since the 15th century.

TURKEY

The founding of the Turkish Neuropsychiatric Society in 1916 marked the beginning of modern Turkish psychiatry. My friendly and generous host, Dr. Ihsan Sukru Aksel, Head of the psychiatric department at the University of Istanbul and President of the Society in 1957, reported that there are now some 200 full members. In 1923 a national Board of Psychiatry was established. It is now considered obligatory for a psychiatrist to pass the Board examinations after 3 years of graduate training, one of which must be in neurology. Some 350 physicians have secured Board certification.

Much of medicine together with most of the psychiatric work in this nation of 24,000,000 people is concentrated in and around the 3 major cities; Istanbul (population 1,500,000), Izmir (600,000), and Ankara, the capital (500,000). Of note is the fact that from 1949 to 1958 the Governor-Mayor of Istanbul was Dr. Fahreddin Derim Gökay, a neuropsychiatrist also well known in America. A former professor at the University of Istanbul, Dr. Gökay is currently his nation's ambassador at Geneva.

In the above hospitals 1,200 new inpa-

TABLE 2
PSYCHIATRIC HOSPITAL FACILITIES IN TURKEY*

Hospital	Location	Auspices	Patient Census	Staff Physicians
1. TIB Fakultesi	Istanbul	University of Istanbul	100	12
2. Medical School	Ankara	University of Ankara	60	12
3. Bikirköy	Istanbul (8 mi. west)	State	3500	30
4. Manisa	Near Izmir	State	237	2
5. Elazig	Eastern Anatolia	State	500	2
6. Armenian Hospital	Istanbul	Beneficial	50	2
7. Sisli Fransiz Hastahanesi	Istanbul	Private	200	8
8. Duman Klinigi	Istanbul	Private	20	2
9. Greek Hospital	Istanbul	Beneficial	50	2

* Compilation made with the generous help of Professor I. S. Aksel and U. S. trained Dr. Kemal Elbirtik (See also Reference 7.)

tients and 6,000 outpatients receive treatment each year. In 1957 a child guidance clinic was established in the University of Istanbul department of neuropsychiatry. Some intriguing research work was underway with mice, on the study of hereditary factors in tumors.

The medical profession in Turkey has had fairly close ties with Europe; especially with medicine in Germany and Austria. Many physicians have a good command of German, some of French and a few of English. In psychiatry, there is an active and growing interest in post-graduate training in America constantly handicapped however by such problems as those of unfavorable monetary exchange rates and currency export restrictions. Nonetheless there are over 30 Turkish graduates currently in

graduate training programs in psychiatry in the U. S. A.(5).

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THE NEW MENTAL HEALTH ACT IN ENGLAND AND WALES

W. S. MACLAY¹

The new Mental Health Act is the first fundamental revision of the English mental health laws since 1845 when the two Bills introduced by Lord Shaftesbury created the system on which all later additions have been based. It was introduced in the House of Commons on December 17, 1958 and received the Royal Assent in July, 1959. The final appointed day for its implementation will presumably be some time in 1960, but in the meantime much can be done stage by stage.

The Act follows closely the recommendations of the Royal Commission on the Law Relating to Mental Illness and Mental Deficiency which reported in 1957. The Report itself followed in spirit the trends in psychiatry which have been becoming evident in Britain over recent years and many of its recommendations can be and are being put into effect at the present time. The New Act will enable those recommendations which require fresh legislation to be implemented as well. It is seldom that a new Act follows so closely on a report by a Royal Commission.

The Act clears away a mass of confusing legislation including the Lunacy and Mental Treatment Acts, 1890-1930 and the Mental Deficiency Acts, 1913-1938. In all it repeals 15 Acts in their entirety and 37 Acts in part. It is no wonder that it is lengthy, containing 9 parts, 154 sections and 8 schedules.

LOCAL AUTHORITY SERVICES

The National Health Service has 3 main divisions: 1. The Hospital and Specialist Services, 2. The Local Authority Services in the Community, and 3. The General Practitioner Services.

The Royal Commission recommended a general reorientation in the care of mental patients away from care in hospitals towards care in the community. They mentioned in particular the need for: 1. Residential hostels or homes for subnormal pa-

tients who either need not go into hospital or who could leave it if they had somewhere to live with some degree of supervision; 2. Industrial and occupational centres for those who are not and may never be capable of normal employment; 3. Training centres for all children excluded from school who can benefit from training; 4. Homes for old people suffering from mental infirmity; 5. More social work and after-care for patients discharged from hospital. The Commission recommended that the provision of these services should be a duty on local health authorities. Clearly all this meant a great extension of local authority work and would require both money and staff. When the Bill did not make these services mandatory as recommended in the Report there was much criticism based on the assumption that the services of the local authority would be permissive and might not be provided, but the Minister made it clear in Parliament that he did in fact intend to make the services compulsory by using machinery already provided in the 1946 National Health Service Act. This method is consistent with the policy of integrating mental health services into the National Health Service and gives greater flexibility by permitting a phased programme which can take into account availability of staff as well as of money. Already meetings between the Ministry and the local authorities have taken place to discuss what can be done. There is little evidence of unwillingness but much anxiety about ways and means.

There is no doubt that the expansion of the mental health services in the community and especially the part to be played by the local authorities is one of the most important changes taking place in England now, so it is, perhaps, permissible to say a little more about the local authority developments already mentioned.

Locally, there will be consultations between the officers of the mental and mental deficiency hospitals and those of the local authority, for instance, about the hostels. Some hospitals have good hostels of their

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own and it is not always easy to decide whether a patient needs hostel care under medical supervision supplied by the Hospital Service or is fit for community life. As yet there are very few local authority hostels for mentally disordered people. Probably both kinds are needed.

Industrial and occupational centres have had a good deal of attention in recent years. There are over 40 of them for adults and more are likely to be provided. Whether patients who work in them will go on to outside employment depends partly on the ability and willingness of local employers to give work to them. There is an obligation under the Disabled Persons Act to employ a quota of disabled persons but the employer may prefer the physically disabled to the mentally disabled.

Training centres for children, hitherto known as occupation centres for mental defectives, are on a very different footing. They were initiated some 40 years ago by voluntary effort. The centres are now a local health authority responsibility and there are some 310 of them. Though doubtless more will be provided, the first new effort is likely to be the provision of residential accommodation at or near training centres for children living far from a centre and only partly catered for by the visits of a home teacher.

Old people suffering from mental disorder may need to use the hospital services, either as full mental hospital care and treatment, or in the form of simpler psychiatric supervision and nursing in separate psychogeriatric hospital units. It is those who do not need specialist treatment and who are comparatively easy to manage, who will go to the homes provided by the local health authority for old people who are mentally infirm. Free interchange of opinion between general practitioner, geriatrician and psychiatrist will be as necessary as free movement of old patients between one hospital or home and another, according to their needs.

The present situation of social work and after-care is very complex. These services are still far short of what is desirable. Nevertheless they have developed to a considerable extent in different areas. The importance of the role, however, adopted by

the family doctor, the local authority and the hospital varies widely from place to place. Workers in this sphere may have had full psychiatric social work training, health visitor training, training in administration, training simply by experience, or no training at all. Into social work generally the report of the "Younghusband Committee," i.e. the Working Party on Social Workers in the Local Authority Health and Welfare Services, has thrown much light, but the improvement in mental health social work which is so much needed is likely to be empirical for some time yet because the big changes recommended by the Report cannot come quickly.

DESIGNATION OF MENTAL AND MENTAL DEFICIENCY HOSPITALS

The changes proposed in the new Act are designed to enable patients suffering from any form of mental disorder to be treated as far as possible in the same way as people suffering from physical disabilities and to encourage them to seek treatment promptly and voluntarily, but at the same time to ensure that there are adequate restraints and safeguards where patients in their own interests or for the sake of others must be compulsorily admitted to hospital and detained.

One way in which the Act helps to achieve this is by abolishing the statutory designation of mental, and mental deficiency, hospitals and by removing the formalities at present attached even to "voluntary admission" for mental treatment. These measures have been widely welcomed and mean that any suitable hospital is free to admit mentally disordered patients. Specialised psychiatric hospitals will, of course, still be needed but there will be more opportunity for better classification and psychiatric wings or wards in or attached to general hospitals will become more common.

It was possible to start informal admissions to mental deficiency hospitals in 1958 under the existing laws. Already over 27,000 of the 60,000 in residence are on the same footing as any other hospital patient and about 70% of the new patients admitted in 1958 entered informally. Now that the new Act is passed it will be possible to

start the same procedure for those in residence in mental hospitals.

CLASSIFICATION OF PATIENTS AND COMPULSORY DETENTION

The single term "mental disorder" is introduced to cover all forms of mental illness or disability. Provision for compulsory detention recognises 4 groups of mentally disordered patients, 1. Mentally ill, 2. Severely subnormal, 3. Subnormal, and 4. Psychopathic. These categories are mentioned and the last three defined in section 4, which is set out in full for the sake of clarity:

(1) In this Act 'mental disorder' means mental illness, arrested or incomplete development of mind, psychopathic disorder, and any other disorder or disability of mind; and 'mentally disordered' shall be construed accordingly.

(2) In this Act 'severe subnormality' means a state of arrested or incomplete development of mind which includes subnormality of intelligence and is of such a nature or degree that the patient is incapable of living an independent life, or will be so incapable when of an age to do so.

(3) In this Act 'subnormality' means a state of arrested or incomplete development of mind (not amounting to severe subnormality) which includes subnormality of intelligence and is of a nature or degree which requires or is susceptible to medical treatment or other special care or training of the patient.

(4) In this Act 'psychopathic disorder' means a persistent disorder of mind (whether or not accompanied by subnormality of intelligence) which results in abnormally aggressive or seriously irresponsible conduct on the part of the patient, and requires or is susceptible to medical treatment.

(5) Nothing in this section shall be construed as implying that a person may be dealt with under this Act as suffering from mental disorder, or from any form of mental disorder described in this section, by reason only of promiscuity or other immoral conduct.

It will be noted that "mental illness" is not defined. In the sections in part 4 dealing with compulsory detention, when qualified by the phrase "of a quality or degree which warrants the detention of the patient in a hospital for medical treatment," it is intended to cover the same range of illness as was covered in the Lunacy Acts by the

words—"person of unsound mind and a proper person to be detained for care and treatment." This latter phrase has never been more precisely defined but by medical tradition it has been narrowly interpreted and there is no evidence that it has been abused.

"Psychopathic disorder" was not defined in the Report of the Royal Commission but has been defined in the Act and the definition has led to much discussion. This is hardly surprising when one remembers the mass of vague, contradictory, confusing literature about the subject. Despite frequent reference to "fools rushing in where angels fear to tread" it is believed that the bravery of those who drew up the definition is justified. The definition approximates to the common use of the term and from the legal point of view seems likely to be workable. There have been criticisms of the words "requires or is susceptible to medical treatment" because some psychiatrists held that psychopaths do not respond to treatment but the inclusion of these words is intended as a safeguard to make sure that persons are not compulsorily admitted to hospital unless it is thought that their condition does require medical treatment. It should be noted that by definition "medical treatment includes nursing, and also includes care and training under medical supervision."

COMPULSORY ADMISSION

It seems necessary at this point to state that most of the substance of the Act is taken up with measures which need only be applied to comparatively small numbers of patients. For example, 69 of the 154 sections in the whole Act are devoted to compulsory measures for unwilling patients and those concerned in criminal proceedings, but in 1958 over 85% of those who entered mental hospitals and over 70% of those admitted to mental deficiency hospitals were admitted on a voluntary basis and it is presumed that the great majority of those in residence will not require compulsory measures. Compulsory measures should be considered in the light of these facts.

Part IV of the Act defines the circumstances in which patients may be compelled to enter hospital. There are 3 main procedures:

1. Admission for observation (section 25).
2. Admission for treatment (section 26).
3. Emergency admission for observation (section 29).

These provide a single set of procedures which apply to patients in each of the 4 groups—mentally ill, severely subnormal, subnormal and psychopathic—in place of the variety of separate procedures used at present. Section 26 does not apply to subnormal or psychopathic patients over 21; patients in these groups who are over the age of 21 cannot be compulsorily detained except for a period of observation unless they have been convicted of some crime.

In each case of compulsory detention in addition to the diagnosis of mental disorder, there must be a statement that detention is necessary in the interest of the patient's health or safety or for the protection of others. Doctors giving recommendations for compulsory detention must record the grounds for their opinion that the conditions are fulfilled and state whether alternative methods of dealing with the patient are available and, if so, why they are not appropriate. This is intended to exclude the use of compulsory procedures if the patient could equally well be treated as an outpatient or as an inpatient without compulsion.

JUDICIAL AUTHORITY

In the past the Acts required an order from a justice of the peace before compulsory admission to or detention in hospital. The most commonly used procedure, *i.e.* Summary Reception Order, needed in addition one and only one medical certificate from a medical practitioner. There has long been a view that the magistrate's order is not an effective safeguard because he cannot form any sound independent opinion on the patient's mental state and because the judicial order links "certification" with the courts and the punishment of crime. The new Act abolishes the judicial order but requires two medical opinions including one from a doctor of special experience. There has been some criticism of the abolition of the judicial order particularly by those doctors who feel that it may damage the relationship between them and their patients if the main responsibility for rec-

ommending compulsory detention in hospital is clearly seen to fall on them. The great majority of the profession, however, welcome the change. They feel that the assessment of the patient's mental condition and of his need for treatment, which is the essential basis for action, is a matter of medical judgment and that it is no advantage to the patient and little to the doctor if the doctor shelters behind a magistrate. A far better safeguard is the requirement for two medical opinions, one of which is by an expert.

AGE LIMITS FOR DETENTION OF SUBNORMAL AND PSYCHOPATHIC PATIENTS

The Act lays down that subnormal and psychopathic patients should not be compulsorily admitted to hospital over the age of 21 except for a short period of observation or after conviction in the courts. They are liable to compulsory admission under the age of 21 years, but, unless admitted through the courts or considered dangerous should not be detained beyond the age of 25. There has been a lot of misunderstanding and criticism of these age limits. It has been said, for instance, that they are not appropriate for subnormal patients because they may need care and protection beyond the age of 25. But care and treatment will be available to all such patients, at any ages informally without compulsion, if they wish it. The Royal Commission recommended strongly that patients who are only mildly subnormal and do not fall into the severely subnormal class should not be detained against their will unless their behaviour brings them into conflict with the criminal law. Anything else would mean too great an interference with personal liberty. Patients whose mental subnormality makes them quite incapable of an independent life will fall under the definition of "severely subnormal" and may be detained for as long as is necessary. The severely subnormal group will include many of those classified in the past as feeble-minded, as well as the lower-grade patients classified as idiot and imbecile. Clearly there may be some difficulties in borderline cases.

SAFEGUARDS

There are 4 main elements in the system of safeguards for the patients. First there are the safeguards provided in the admission procedures. Secondly, there are the time limits of the powers of detention. Thirdly, the power of discharge by relatives. Fourthly, there are the new Mental Health Review Tribunals with powers of discharge, to which patients and their relatives have access. There will be one Tribunal for each of the 15 hospital regions. The members in each region will be drawn from 3 panels, one of legal members, one of medical members and one of other members with relevant experience. At least one from each panel will sit together when applications are considered. The extent to which these Tribunals will be used and their exact procedure remain to be seen.

BOARD OF CONTROL

The setting up of Review Tribunals and the transfer of other duties to the Ministry of Health has made it possible to dissolve the Board of Control as advocated by its own members in their evidence to the Royal Commission. Its dissolution is in accord with the requirements of changing circumstances, particularly the integration of the mental with the other health services, but many are sorry to see it go and there have been many tributes to its work over the years in improving the mental health services before Cinderella became a Princess.

ADMINISTRATION IN PSYCHIATRIC HOSPITALS

The Mental Health Act has once again focussed attention on the question of medical administration in mental hospitals and

particularly on the role of the medical superintendent in relation to other consultants on the one hand and to the lay administrators on the other. Under the new Act the legal obligation to appoint a medical superintendent who is chief officer of the hospital ceases and there is no doubt that the powers of the "responsible medical officer" referred to in section 47 for purposes of discharge or other purposes will not be vested only in the medical superintendent. This, however, does not necessarily mean that there is no need for a medical superintendent or some other form of medical administration. Everyone agrees that the days of the autocratic superintendent have gone and that consultants should have complete clinical responsibility for their patients, but hospitals must not lightly be deprived of the kind of leadership they need and from which many have benefited in the past. There is need for much thought to be given to the problem of what is best for patients and for the hospital as a whole.

CONCLUSION

The new Act has received a warm welcome throughout the country. One reason for this is the change in public attitude. Mental disorder is much more reasonably tolerated than was the case 50 years ago and this has made many old restrictions unnecessary and undesirable. The new Act makes it possible to stop enforcing them and makes legal procedure less complex and cumbersome. It shows a hopeful confidence in doctors, administrators and in an enlightened public. In this article an attempt has been made to describe some of the Act's more important features and the discussion which they have raised.

JOINT COMMISSION ON MENTAL ILLNESS AND HEALTH¹

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When asked to design a survey of the mental health resources of the nation and to make recommendations for future plans, the commission and its staff decided to orient the study around individuals rather than around various professional groups and services. We wished to find out what people do when they become unhappy, worried, mentally ill, or otherwise troubled. We believed that people seeking aid for problems would go to some type of organized helping agency, either the medical profession, a hospital, a clinic, or a social agency. We also believed that a substantial number would turn to their clergymen for help. A similar line of reasoning led us to believe that people seek to improve their general well being by use of various recreational and educational facilities.

Obviously, we needed to determine the available manpower to supply these services. We also wanted to determine the advances being made in the research field, and to study factors that might interfere with development of research programs. Finally we wanted to establish methods of determining the financial cost of mental illness.

Space does not permit presentation of all the material regarding organization and findings that will be published in 11 monographs, but selected areas will be discussed.

We asked the Survey Research Center at the University of Michigan to determine by sample survey what makes people unhappy, and what agencies, or persons, render aid. The Survey Research Center staff headed by Angus Campbell and Gerald Gurin, working with our staff, developed a schedule of questions. The testing of the questionnaires was done carefully, and the

interviewers were especially trained in handling this particular study. The Joint Commission is very pleased with the way the study was managed.

Obviously, the material obtained reflects only those aspects of mental attitudes and feelings that are measurable in an interview; it represents a sample of the American population, including their satisfactions and dissatisfactions, things which concern them, and the resources and strength they bring to bear on these problems. This study reveals that people of different socio-economic groups and of different education differ in the satisfactions they achieve and the problems which they experience in life. This will be useful in planning mental health services for various population groups. The study revealed that people who seek help for personal problems tend to have a psychological orientation to life; that is, they are introspective and self-questioning. People with a psychological orientation tended to have psychological rather than physical symptoms as a response to their stress. The expression of psychological orientations to problems was present in highest percentage in women, younger people and the better educated. These same groups were the ones most ready to refer themselves to professional sources for help.

Of tactical significance is the information about sources of happiness, unhappiness, and worry. The major national issues, the international situation, the threat of atomic fallout, the housing shortage, high taxes, inflation and crowded highways (reputed causes of great tension and stress) appeared to be an important source of worry to few people. Satisfactions derive from rather mundane things, income, families, children, and community activities. Correspondingly, worries are concerned with health, families, children, money, job situations and the everyday personal tribulations with which people are faced.

The information that people worry over

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rather personal matters is in a way encouraging. The national trend toward improving community services for persons under personal or economical stress by improving general health services, job security, economic security for people out of work, plus our declining death rate, especially in children, is directed toward the major reasons given as causes of unhappiness and worry by the sample population.

Another important fact emerging from this study is that people who define their problems in psychological terms make up approximately one-fifth of the population. At least one-fifth of the population answered the question, "Have you ever felt you were going to have a nervous breakdown?" in the affirmative. Only 4% of the total sample felt the causes of their problems to be external to themselves. About 10% of the total population felt that the problem was within themselves, and they would have benefited from professional help. About 14% of the people interviewed had sought professional help. In seeking help people tend to go to their clergymen, to their family doctor and to the psychiatrist in that order of frequency.

The actual number who state that they have sought psychiatric aid is surprisingly large when one considers the small number of psychiatrists, and the percentage of them concentrated in large cities. There are about 350,000 clergymen and 150,000 physicians available, fairly well distributed throughout the country in cities and rural areas. In contrast, there are at most 10 to 15 thousand psychiatrists; it is amazing that more than 2,000,000 people in this country have consulted psychiatrists because they thought they were going to have a nervous breakdown. On the basis of numbers, the rate of clerical consultation should be 20 times, and general medical consultation at least 10 times the rate of psychiatric consultation. In fact, the ratio runs approximately 4 to 1 and 2½ to 1.

The socio-economic status of the individual seems to play an important part in determining whether or not he defines his problems in psychological terms. But within groups persons with marital problems tend to consult a clergyman, a general physician, or a marriage counselor. On the

other hand, people with problems of child guidance, or with personal adjustment problems, which they interpret as psychological, more often consult with a psychiatrist. Most people voluntarily choose the kind of help they seek, but about 8% are referred by their physicians, and another 8% by families and friends. Only 1% sought help because of something they read or heard in some of the mass media, and about 1% were referred by the clergy.

This phase of the study has two important implications:

1. Current efforts to aid the clergy and the family physicians to become competent to offer counseling to the mentally disturbed serve an important function, since we know that people are already consulting these persons in large numbers.

2. We know that people are ready to consult psychiatrists and apparently do so in relatively large numbers in spite of poor distribution.

Our expectations of having any large increase in the number of psychiatrists available in the immediate future is poor indeed; therefore, we must expedite training, and most particularly assure optimum use of currently available manpower.

The size of the mental health problem will vary with the definition of mental illness. In any case, we can estimate the patients who actually seek psychiatric care. On an average day there are approximately 640,000 patients hospitalized with a mental disorder; if one includes the mentally retarded, the number rises to more than 700,000 persons. These people are cared for in the 1,250 hospitals that accept mentally ill persons for diagnosis and treatment. About 85% of these patients are found in large state hospitals, most of which have 500 or more beds. About 430,000 different patients are admitted to the non-federal psychiatric facilities each year, 270,000 of these to the specialized mental hospitals, and the remaining 160,000 to the psychiatric units in general hospitals. The admissions, plus patients already there at the first of any year, bring the total number of persons hospitalized in a year to 1,070,000. Approximately 30% of the patients admitted in any year have been hospitalized at least once before for mental illness. One-third of the

admissions to all public and private mental hospitals are 75 years of age or older, and many state hospitals of the larger type report that a third or more of their patients are 65 or older on admission.

The general use of psychiatric resources can be summarized in terms of the total hospital facilities. There are 6,818 registered hospitals in the country, of which 7% are psychiatric. These 6,818 hospitals have 1,558,091 beds, of which 45% are psychiatric. The average census of all the hospitals on any day is 1,300,000, and of these patients 51% are psychiatric. On the other hand, of the 23,000,000 admissions in a year, only 2% are psychiatric, and of the 1,400,000 personnel in all categories hired by the 6,800 hospitals only 17% are employed in psychiatric hospitals. Thus, as we well know, our mental hospitals are large, overcrowded, understaffed and have many long term patients.

In addition, we estimate that the mental health clinics of all types treat at least 380,000 patients in a year, and that psychiatrists treat somewhere around 400,000 (give or take 30,000) in their offices. It is estimated that the number of psychiatric patients attended by internists and general practitioners varies from 10 to 50%.

There have been many attempts to count the mentally ill in the community, apparently, the more intensive the survey of the community, the larger the number of patients discovered. The prevalence figures in these surveys give a rate in the United States varying from 44 per thousand to 213 per thousand. The Michigan material, which is in no sense a prevalence survey, found more than two million persons who say they sought psychiatric help at some time; these figures do not include patients in hospitals, or persons in the armed forces. On the basis of the epidemiologic studies done, one may estimate that about 10% of our population have nervous or mental illness of sufficient severity to warrant appropriate treatment. This would mean 17,500,000 now in the nation. Our estimates show that 1,800,000 are treated in medical agencies in a year, or approximately 10% of the potential crop. In terms of adequacy of these treatment resources, we have found no community which believed it had

enough hospital beds for the mentally ill, enough clinics to take care of the mental health problems known to exist, or enough psychiatrists to care for the people wishing psychiatric care.

Dr. George Albee made an exhaustive study of the manpower problem of psychiatrists, psychologists, social workers and nurses. His results can be summarized in one statement. We do not have enough trained individuals nor are enough persons entering universities with an interest in this field so that we can expect adequate numbers in the foreseeable future. This can only mean that we will ultimately fail in our attempts to supply needed services using techniques based on our present knowledge of the cause and treatment of mental illness. One can conclude that we should at this time withdraw some money and some manpower from the support of treatment services (with full realization that this means further neglect of already poorly cared for patients) and use the competent manpower and money for research on causes and more effective treatment of mental illness.

Morris Schwartz and his co-workers have focussed their attention primarily on the new trends in the field, using conventional treatment systems as a background against which to analyze these new trends. They have observed programs, talked with experts, and reviewed the current literature on hospital and community patterns of care.

The effort to give immediate treatment in the community to mentally disturbed patients is one trend in which Schwartz is interested.

The hiatus, between the time a person becomes mentally ill and the time he receives professional treatment, has, for a long time, concerned practitioners. The long waiting lists for treatment have led to new programs, some which have concentrated on providing emergency psychiatric care while the patient stays in the community. They have attempted, either by home visiting by a psychiatric team, or by having a psychiatrist on call at all times in the psychiatric section of a general hospital, to narrow the time interval between the acute eruption of mental illness and the giving of professional help. The details of how

these programs can be most effectively conducted are still in the process of development. However, the problems are quite clear; they concern how to reach the patient when he most needs help; how to keep him out of the hospital while he is getting help; and how to maximize the effectiveness of scarce professional time by initiating appropriate intervention at the most appropriate time. It is our impression that these programs of emergency care are "paying off" and our recommendation is that they be continued and extended, while at the same time their efficacy and the conditions of their success and failure are investigated.

Schwartz and his group have done a similar analysis of a number of other programs dealing with the community care of mental patients. Their report will discuss attempts to extend the outpatient treatment system into the community, into the courts, prisons, industry, the general hospital, the school, and a variety of social agencies. It will also discuss attempts to broaden the conception of treatment, where, for examples, families as a group are being treated, or consultation is being given to public health nurses to facilitate their handling of mental patients.

A large variety of new programs has been initiated in mental hospitals throughout the country. Some of these programs have emerged in the course of practitioners' attempts to develop therapeutic milieu in their hospitals. Thus, hospitals have changed their atmosphere by giving greater freedom to patients; they have changed the role of personnel and patients, and have afforded patients greater opportunities to make decisions about, and take responsibility for, their own lives; they have instituted many procedures oriented toward bringing lower echelon personnel into the decision-making process; they have freed communication between the different levels of staff; they have developed the conception that many types of personnel may be of therapeutic significance to the patient; and they have introduced novel ways in which the therapeutic potential of personnel is used. The issues practitioners have concerned themselves with in developing therapeutic milieu are related to the

physical and social organization of the hospital. They are experimenting particularly with the redefinition of roles and relationships in the hospital in order to maximize its therapeutic impact.

Schwartz and his group have studied in a similar fashion attempts to break down the barriers between the hospital and the community. Here such programs as the open hospital and the psychiatric section of the general hospital are discussed. In addition, they have described programs where the individualization of care for patients has been the focus of concern.

The final set of trends Schwartz and his co-workers analyze deal with methods of aftercare. These facilities include halfway houses, foster family care, sheltered workshops, vocational counseling, rehabilitation centers, social clubs, and public health nurses. Some programs concentrate on providing continuity of care through the same person, trying to ensure that the staff member who saw the patient in the hospital will also see him after he has been released. In each program the central issue is to continue care for the patient in a way that fits him.

Two other trends in aftercare are the grading of stress for ex-mental patients and the tailoring of treatment for them. Programs of grading stress are concerned with developing optimum "pressures" on patients to facilitate their performance. Programs of tailoring treatment for ex-patients are oriented toward finding the particular rehabilitation activity most needed by a patient.

As a result of new treatments—chemical, psychological and social—changed attitudes of staff and the surrounding community, and probably other factors not detected, there has been a substantial reduction in the number of resident patients in the country's hospitals. The number of beds actually emptied by discharge of patients, plus the former annual increase in the population of mental hospitals, means an overall saving of several thousands of hospital beds.

Community mental health services have expanded in the past several years. A few states have laws which make it possible for the state and community to collaborate

a support of local mental services. Pilot programs made possible through grants in aid from the National Institute of Mental Health played a very large role in demonstrating the effectiveness of these clinics and in subsidizing the states at the beginning. However, there seem to be other factors at work in the population not easily described. The demand for psychiatric and other mental health services in agencies previously not thought to require such professional help is growing apace. For example, psychological testing and assessments in industry are in great demand. Courts, prisons, juvenile agencies, social agencies, school systems and industries are requesting psychiatric services. Agencies once content with diagnostic services from psychiatrists and psychologists now demand treatment for their clientele. Furthermore, by treatment they often mean one-to-one, intensive psychotherapy, psychoanalysis, or at a very minimum intensive, psychoanalytically oriented group therapy. One state has more than 60 psychiatrists and psychologists giving intensive therapy to offenders at the court or prison level—this in addition to long time established traditional diagnostic services. Whatever the causes, these demands for mental health clinics and allied services are growing more rapidly than the manpower pool for staffing them.

The inauguration of new services is not always carefully planned. Some new services have been started without coordination and full use of existing services in the community. The desire to create new services often stems from a wish to do something about something, and the belief that a mental health clinic or counseling and guidance service will magically care for the social ills and unhappiness of a community. Fortunately, there is a growing tendency for communities to make a survey of their needs and resources before starting a new service. The importance of careful planning to utilize existing services to their maximum cannot be overemphasized. The demands for new services are growing more rapidly than the complement of personnel to operate them, and as a nation we are not gaining on our professional manpower shortage, but losing ground. There is a trend to

develop mental health services in the community that are health promoting as well as therapeutic, and we believe this is a productive trend.

Many communities still lack the basic resources and agencies necessary for mental health promotion and the treatment of mentally ill persons. Reginald Robinson and his group made a statistical study of the 3,103 counties in the nation (exclusive of Alaska, Hawaii and Puerto Rico). Two thousand counties have no psychiatrists. Two thousand have no community family service societies, and 1,500 have no public child welfare services.

A site survey in a representative sample of the counties shows that where community services are lacking, some people are not able to obtain needed help. Most counties studied recognize the need for development of community services, and there is an encouraging trend to use of welfare workers, county health nurses and other agencies to help augment the services made available through mental health clinics and hospitals. In the more isolated areas the clergy and the family physicians may assume the major responsibility for mental health counseling, and the physicians treat the more seriously ill until they may be referred to a hospital or clinic.

Services for the communities now lacking them will require professional staffing. Dr. Albee's manpower report discusses the difficulty in enticing enough college students into the professional fields to supply our needs. Because of the critical problem of recruitment and distribution of psychiatrists, Daniel Blain has been making a more intensive study of the psychiatric manpower problem. The latest information available to me in rough draft form and, therefore, subject to correction by him, reveals that in August of 1958 there were 2,723 psychiatric residents in 245 training centers in this country. This is a gain of 30% (650 residents) over the number training in August, 1956. He reports an increase in the number of programs approved for 3 years' training in state hospitals, so that in 1958, 51% of state hospitals were approved for 3-year programs.

Of the 650 additional residents in training in 1958 as compared to 1956, 250 were

state hospitals and 300 in university hospitals. The federal training centers, largely concentrated in veterans hospitals, were training only 15% of the total in 1958 as compared to 19% in 1956. This is a most discouraging trend and one that should be studied so that it may be reversed. There is a steady trend toward having larger numbers of residents in training in individual centers. The most rapid rate of increase in residents in training represents those from foreign medical schools, and this group represented 373 out of the total increase of 650 residents. Thus, more than 50% of the additional persons in psychiatric residencies are from foreign schools, and of the 2,723 physicians in training, 1,066 are from foreign schools. We do not know what proportion of these physicians will remain in the United States after they complete their training. There is also a spottiness in the recruitment of psychiatrists from the various medical schools. There are 77 United States medical schools represented among the persons serving psychiatric residencies, but 27 of these schools supplied 57% of all U. S. graduates in resident training. Most of the schools supplying large numbers of trainees were in the middle Atlantic and north east states.

The research programs in psychiatry and related fields are objects of special study by the Commission. At this time about all we can say is that there is an encouraging trend to more long-term support and to programatic type of support which should make it easier for people to carry on basic research.

The problem of recruiting research workers who must exist from one project application to another, with no assurance of renewal of grants, is a major handicap in recruitment of people into the research field. Furthermore, it will do little good to encourage the development of research institutes and elaborate research programs unless we train research workers. There is an increasing interest on the part of the NIMH and a few of the foundations in increasing the facilities for training research workers. The next step is to insure some type of reasonably on-going support for the research work these trainees will do,

and a support that has a reasonable degree of personal security.

Viewed in perspective, we are encouraged by the changes taking place, not only by the vast areas of work yet to be done, and humble in our understanding of how little we really know about man's behavior, sick or well. We have studied representative areas of concern to mental health workers and have omitted others because of limits of time and money. From all this we may hope that there will be improvement in the use of available knowledge, but also particular efforts at intensifying the training of research workers and their long-term employment in mental health research.

DISCUSSION

FRANKLIN G. EBAUGH, M.D. (Denver, Colo.).—To my knowledge, this is the first time that we in psychiatry have been so definitive in testing our operating policies, and seeking perspective on our necessarily integrated role in society. Specific efforts toward increasing the manpower supply, the efficient use of hospital facilities, the availability of mental health services, and the followup and "indirect care" of patients have been ingenious and effective. Now we stand on the threshold of putting into operation a long-term, organized program to "back up" and stabilize our previous emergency measures. The brilliant leadership and vision of Jack Ewalt and others of the Joint Commission is providing us with the foundation for achieving this result.

I am impressed with the sound methodology with which the study was designed. The proposed monographs reviewed by the paper just presented, suggest that we shall have a very clear idea about every aspect of community need, as well as the available mental health resources.

It is impossible to predict the contribution which the Commissions' first monograph on current concepts of positive mental health may make in providing a reference guide for our extended forays into the community. In my opinion these criteria, which combine both the individuals' definitions and the definitions of social adaptation are most valuable because of

their flexibility. The gestalt concept—the individual in terms of his particular motivations and environment—must be intrinsic to treatment which aims at comfortable social adjustment. Thus, the suggested criteria of attitudes toward the self; integration of functioning, autonomy, perception of reality, and environmental mastery encourage an “individualized” focus in treatment planning, at a *theoretical* level. The Michigan findings that people of different socio-economic and educational levels value different satisfactions make different demands, and respond to different kinds of stress support this “individualized” definition of mental health, at a *practical* level. Care must be taken in helping the individual help himself, rather than having these agencies promote further dependency; otherwise the mental health programs will defeat themselves.

In considering the implications of the information in this paper, we are gratified by the confirmation of many of our current ideas about the causes of people's worries. The everyday problems of health, child welfare, employment security, and personal adjustment are difficulties which in most cases are amenable to therapeutic assistance either through environment manipulation or changes in personal attitude. It is satisfying to know that social trends toward assisting and increasing the individual's securities in these areas seem to complement psychiatric resources for maintaining mental health in the community.

Much of the common sense meaning of these findings, and the way they confirm our daily clinical observations, derives from the Commission's decision to orient the study around individuals, rather than professional groups and services. This provides an “inside view,” and a closer identification of viewpoint from which we can plan the broad mental health program.

Perhaps I take particular satisfaction in the manpower studies. As a result of our 1932 survey we warned about the need for fuller training of the general physician in psychiatry, and for increasing the number of psychiatric specialists. Now, the statistics in this study demonstrate that the general practitioner is the first source of help to which great numbers of people turn “in

time of trouble.” His accessibility, and extensive background knowledge about his patients are great assets in aiding them with emotional problems. The general practitioner is therefore a major asset to the manpower supply, and one whose resources and talents should be used to the utmost.

It is somewhat remarkable that there seems to be a certain lack of psychological mindedness, even today, among the younger general practitioners and residents in the specialties. They give lip-service to psychiatry; however, some tend to avoid it even while in training. Perhaps this lies in their need to grasp a vast amount of medical knowledge in a short time; or in deficient preparation for psychiatric or psychological mindedness of their respective medical schools.

The same essential comments apply to the clergyman, to whose counselling large numbers of people entrust their emotional welfare. It would be interesting to know what position those individuals who first consult their clergyman occupy on the dimension of “psychological orientation” toward adjustment problems. I suspect that the clergyman has access to many individuals who do not easily consult a psychiatrist, at least in the early stages of illness, and that therefore his potential contribution to mental health may be doubly valuable.

Current statistics verify not only the readiness of patients to consult psychiatrists in numbers disproportionate to the supply, but also the efforts of individual psychiatrists to manage this overload. An attempt to facilitate efficient use of our time, through organized community planning will undoubtedly be beneficial to psychiatrists as well as to patients.

The necessity for research is emphasized in this project. In this respect, one can detect a heartening interest across the country, and in the increased availability of financial support of research.

The authors state that the trend toward development of new services is in a way compounding our manpower problems; one can assume, however, that we who have long beaten the drums for better mental health methods and facilities are partly responsible for this. If our manpower prob-

lems are now complicated by what we have always known we needed, we can nonetheless make use of increased potential services by an unprecedented amount of community organization, communication, and establishment of mutually accepting interprofessional relationships. Ours is the position of leadership over this sprawling mental health community, and it is my opinion that this study by the Joint Commission will give us the functional "know-how" of better leadership than ever before.

Having been closely associated with community mental health problems for many years, I am interested not only in increasing the numbers of trained workers and the communication among those who are already available, but also in the use of the total community in a better integrated sense. The problem of "hiatus" between the time of acute onset of mental illness and treatment is one which I feel is basic to other problems, such as later social rehabilitation and a broadened treatment conception. Not only is the patient himself more amenable to treatment at the outset of illness, but he is subjected to less "post-illness" stress if his employment, family, and other associations have not already been taxed to the limits of their resources. I also feel that the developing "psychological orientation" of the general population creates a society which more closely approaches a "therapeutic milieu" in terms of both prevention and rehabilitation.

In closing, I want to emphasize the indebtedness we feel to the officers of the Joint Commission for their invaluable leadership, and my confidence that rapid progress in national, state, and local organization for management of mental health problems will be forthcoming as a result of their efforts.

DISCUSSION

D. EWEN CAMERON, M.D. (Montreal, P. Q.).—It is somewhat difficult to discuss this paper since it is not clear whether it is the basic report of the Joint Commission or simply some notes on progress. However, it bears the names of the leading members of the Commission and is recorded in the program of the last annual meeting of the APA as reporting the findings of the Com-

mission and hence should properly receive our fullest scrutiny and consideration.

This report is based on by far the most comprehensive survey of the mental health resources of the nation hitherto carried out. It has been at once heavily financed and supported by a most imposing array of national organizations having interest in the mental health field ranging from the great to the tangential. The number and the diversity of advisers and consultants, central and field staffs, have been as eloquent a testimony to the great size of the enterprise as has been the wealth of publicity and the number of progress reports.

In seeking standards adequate to judge the quality of an undertaking of these dimensions, the discussant may well feel uncertain where to turn. Fortunately, those responsible have also supplied a measure. The earlier announcements, though not the later, stated that this was to be a "Flexner type" of report on the mental health resources of the nation.

Flexner's report was one of the great documents of American medicine. The rising supremacy of medical training in the North American continent springs from the profound scrutiny, the uncompromising criticism of this man. He had the courage to condemn to oblivion the shoddy and the third-rate. His vision set the great ideals and objectives of medical teaching for the next half-century.

When we turn to this report by the Joint Commission, we see that it—no less than the Flexner report—is a survey of the conditions of the times. At this point similarity ends. Where Flexner recorded his vigorous criticism, his intolerance of what he found amiss with medical education and, in particular, where he set up the guideposts which we still follow, the Commission in contrast appears merely to reflect what its members have been told. If there is a reported lack of personnel, the Commission is in favour of more personnel. If there is dearth of research funds, the Commission is in favour of more money. If a considerable number of people go to the clergy for help with their problems, the Commission is in favour of adding the clergy to their team—this despite the deplorable

record of clergy of all faiths with respect to the progress of medical science.

It is difficult to see any place in this report where the Commission offers firm and inspiring leadership and no place where it sets great ideals and objectives for the future. The members of the Commission are against a reduction of effort on the part of the Federal training centres and, in an almost vigorous statement, they declare that, since we do not have enough trained people and not enough are undertaking training, we shall ultimately fail in our attempts to supply needed services using techniques based on our present knowledge of the cause and treatment of

mental illness. But the rest of the paper disposes one to favour the belief that this is simply something that the Commission has been told.

A first-rate survey must be based on first-rate questions, and first-rate questions in turn require a vigorous imagination supported by unsparing drive for excellence and an intolerance of the second-rate. The Commission, as it records itself in this paper, gives no leadership, no direction, no great objectives for the future. It is good only to the extent that it reports the vitality, the enthusiasm and the devotion to be found in hundreds of centres across the country.

MANPOWER STUDIES WITH SPECIAL REFERENCE TO PSYCHIATRISTS¹

DANIEL BLAIN, M.D.,² HOWARD POTTER, M.D.,³
AND HARRY SOLOMON, M.D.⁴

THE SETTING

In 1956, stimulated by unfilled jobs and nationwide demand, the Office of the Medical Director of the APA, in Washington, issued the following statement:

The problems of personnel shortages in psychiatric services are so overwhelming, so well known, so frustrating that they seem to threaten the very possibility of progress. For lack of manpower whole programs lie in abeyance; clinical facilities are hopelessly overtaxed and some perforce are closed to new admissions; waiting lists are static; key positions, such as state commissionerships, superintendents of mental hospitals, directorships of psychiatric clinics and professorships stand vacant for months and even years. Research crying to be done awaits the scientist to carry it out. Teaching and supervision, the key ingredients of programs which will vastly expand our human resources are only sparsely available. The actual carrying out of preventive techniques is virtually a dream. Broad scale planning for the nation, state and community takes on an Alice-in-Wonderland atmosphere for there are no real people to fill the slots in the neat organization charts that we conjure. So much is done by so few and our efforts are so thinly spread that total efficiency is inevitably of a low order (1).

THE PLAN

In June 1958 authority was obtained from the Council of the APA to organize and seek funds for "A Manpower Project (Recruitment, Distribution and Utilization of Psychiatrists)" and on September 15 an agreement was reached with one of the authors to operate this project with a modest sum of money collected from private individuals and foundations. Consultants⁵ were obtained, and tentative explorations were made under 6 headings:

recruitment into psychiatry, into the subspecialties of psychiatry, into large employment programs; geographical maldistribution; utilization of psychiatrists; experimental placement in top positions.

After 8 months we have gained sufficient experience to make a report of observation, information collected, and outline a major study for the future.⁶

In this paper we shall refer to 1. The manpower problem in general with special reference to scientific and professional personnel; 2. The medical and general educational pools from which psychiatrists are drawn; 3. Present knowledge concerning psychiatry; 4. Subjective opinions from leading authorities.

1. *The General Manpower Situation.* We are indebted to Professor Eli Ginzberg and his associates in the Columbia University National Manpower Commission for a series of publications which form a major part of manpower studies of the last few years. Restricting ourselves chiefly to scientific and professional personnel, we can say that these have grown in number much faster than the population. Fifty years ago there were approximately one million scientific personnel in the scientific, professional and related fields. There are now approximately 5 million.

In spite of this, the demand for scientific and professional personnel has recently exceeded its availability. It was toward the end of World War II that scattered warnings of inadequate scientific manpower were first felt; and shortly after Korea, these shortages were recognized as of critical importance. Shortages of engineers, physicists and chemists were caused by a combination of *expanded goods production*

Francis Gerty, Eli Ginzburg, Carlyle Jacobson, Lawrence Kubie, Howard Potter, Harry Solomon, Sidney Spector, William B. Terhune.

⁶ As of Nov. 1959, the Executive Committee authorized a special committee of Dr. David Wilson and Norman Brill to develop the design for future work of the project, since Dr. Blain had become Director of Mental Hygiene in California.

¹ Read at the 115th annual meeting of the American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

² Director of Mental Hygiene, Calif.

³ Director of Education, Letchworth Village, N. Y.

⁴ Commissioner of Mental Health, Mass.

⁵ George Albee, Kenneth Appel, Ward Darley,

and expanded defense; whereas other shortages, such as, nurses, teachers, rural doctors, psychiatrists and others in state hospitals, and competent administrators, have much longer histories and more complex causes.

The demand for physicians comes from higher standards of health and a growing national income. Limited capacity and higher requirements of medical schools have restricted the expansion of doctors. Gross uneven distribution has accentuated the discrepancy.

In general, shortages are the reflections of scientific discovery and technological change. Dr. Ginzberg and his associates comment, "The demand may fluctuate sharply in short run, but the size of supply will change slowly." The question arises, what methods can a democratic society utilize to insure a reasonable balance between supply and demand for manpower, since the factors influencing these are not amenable to direct control? The Nation can follow two broad courses of action: 1. Try to alter distribution of men and women so as to increase the number preparing for work in fields where short supply is anticipated; and 2. Expand the size of total college population so more will be educated and trained in each field.

There are undeveloped resources in the scientific and professional manpower field, summarized as follows:

Only one half of those who are capable are now entering college. Two-fifths of those who start college do not graduate. Twenty-five of those who graduate have the ability to get doctors degrees, for everyone who actually gets such a degree.

Therefore, one may say there are 3 groups in reserve which perhaps could be tapped when the right formulae are developed: 1. High school graduates who do not enter college; 2. Those who start but do not graduate; 3. Graduates who do not pursue post graduate training.

And there is an additional hidden reserve, Capable ones who get low scores because of deficiencies in early schooling. These are in poor communities which spend little on education. Particularly found among racial and ethnical minorities, many are handicapped by poor early education and later discrimination in employment.

It is quite obvious the supply of psychiatrists will be markedly affected by the general situation in scientific and professional manpower.

2. *General Education and its potentialities.* Psychiatrists as physicians come from the colleges and must compete with all professional and scientific manpower needs.

Albee in his excellent treatise for the Joint Commission on Mental Illness and Health about to be published has some potent remarks about the educational world. He says shortages in mental health professions do not exist in isolation—there is a widespread shortage of highly trained people in a variety of professional and technical areas. There seems to be a pervasive resistance to an allout educational effort by our country; resistant attitudes toward lengthy and difficult educational programs certainly affect recruitment into the mental health professions. Many educators feel(2),

The fundamental problem is a lack of appreciation or interest in intellectual achievement and the acquisition of knowledge which has grown up over a long period of time and which is reflected in our pervasive neglect of education plant, the low repute in which teaching is held, the lack of a ground swell of support for education in the face of crisis.

The Educational Testing Service in 1957 points out that many of the students now attending college are less intelligent than others not attending college and that, in general, we are losing a very large number of high ability students because of the lack of financial support for their education.

The paucity of the numbers of those who advance to positions of serious responsibility in the field of teaching, professional work and research is illustrated by the following:

Of 10,000 college graduates (bachelors and first professional degrees),

		will obtain doctorate
980	natural science	74
200	psychology	12
1120	social science	24
1200	humanities	24
960	engineering	14
1340	business and commerce	2
1940	education	32
1030	all other fields	6
600	health fields	most

Time does not permit extension of these remarks in this very serious matter relating to our deficits in the field of total education, of which medicine and its specialty, psychiatry, must be a very important member.

3. *Medical Graduates as a Pool from which Psychiatry is Derived.* The pool of potential physicians is almost entirely restricted to those who at the end of their first year in college are interested enough in medicine to undertake premedical curricula.

Numerous estimates have been made about the shortage of physicians both now and in the future. The President's Committee on Health Needs of the Nation has stated that doctors by 1960 will be short by between 25 and 45,000, and 1960 is only one year away. Nurses will be short by 50,000. The United States has a lower number of persons per physician than any country in the world, but its distribution problems are serious. Howard Rusk in the *New York Times* has stated,

To maintain our present physician population ratios of one to 730 for the Nation, we will need by 1975 315,000 physicians. We now have approximately 225,000 and our current rate of increase is about 3,000 compared to a need for a current increase of around 5,250 per year.

It is a well-known fact that it will take approximately 8 to 10 years for any new medical school in the planning phase to be built, collect its faculty and graduate a class of seniors. There is some hope that a 10 or 15% in annual graduation can be obtained by an increase in two-year medical schools which will make up for the drop between the basic science two years and the two years of clinical medicine which now occurs and is responsible for considerable attrition.

3a. *Shortages in Psychiatrists.* There are approximately 13,000 physicians spending full time in psychiatry at this time.⁷ Somewhere between 40 and 50% of these are certified by the American Board in either psychiatry, or psychiatry and neurology. The number can only be increased by an increase in total number of physicians at present percentage or increasing the present percentage who go into psychiatry. Effort in

this direction runs counter to needs of other specialties and threatens to impair the present ratios. It would seem possible to justify an increase in view of the large preponderance of psychiatric patients and psychiatric needs and the need for consultations to cultural and welfare and chronic disease institutions, such as education, courts, industry, prisons. This will, however, require definitive studies.

The shortages of psychiatrists is related to the function of the psychiatrist, to the numbers that each individual psychiatrist actually do treat, and whether or not they select more difficult cases which demand great training and skill. It has been said, perhaps facetiously, that if the number of patients seen by the average psychiatrist in the United States could be doubled, it might be an equivalent to having twice as many psychiatrists.

One of the authors has mentioned 7 ways of better utilizing present available personnel. These are: 1. By redefining the functions of psychiatrists, general physicians, psychologists, nurses, social workers, and others; 2. By reassigning duties and responsibilities of these groups; 3. By delegating responsibilities from the more highly trained to the less highly trained with adequate supervision; 4. By modifying organizational structure and lines of authority to increase administrative efficiency; 5. By making greater use of social forces and persons from outside (volunteers) and groups to assist in treatment; 6. By increasing the skills of less highly trained personnel through a vastly increased inservice training; 7. By decreasing our reliance on residential treatment in favor of day hospital service with patients living at home, or in foster homes, or other simplified arrangements.

It is obvious that one would hope for research break-throughs which might simplify treatment processes, prevent large groups from needing treatment. This resource needs development to the extent that financial and other resources directed toward research should parallel resources directed toward utilization of present knowledge (treatment).

One of the endeavors of the past year has been to bring up to date certain in-

⁷ Estimating APA membership at 85%.

formation related to physicians who are, at this time, residents in training in approved psychiatric training centers. This is a duplication of the study made in August 1956 and shows some remarkable changes which have occurred between that year and August 1958. Detailed analyses of these studies should be available shortly, but I can report here briefly. In 1956 there were 2,074 residents; in August 1958, 2,725, an increase of approximately 30% in two years. There has been an increase in the number of residents in each training institution in all states of the union except in two. The number of approved 3-year programs had increased in these two years by 30, 22 of which are in state hospitals. Of tremendous significance are the numbers in training in the United States who are graduates of foreign medical schools. In 1956, 30.2% of all residents came in this category. In 1958, this percentage had risen to 40% of all residents in training. The follow up of the 30% in 1956 showed that one half of these had already obtained citizenship; one quarter were intending to put in their naturalization papers. At that time the remaining quarter were intending to return to their own country. If one figures 70% of 2,074 as against 60% of 2,725, it shows a total of 1,351 residents in 1956 who attended American medical schools had expanded to 1,635 in 1958, a gain of 174 American citizens. During these two years, there was also a change in the gross number of students who attended medical schools outside the United States. This number had grown to 1,090 in 1958, an absolute increase of 468. No follow-up has yet been made of the probability of this group of 622 staying in this country or returning to their own country.

The APA Manpower Project is engaged, with the help of the Association of American Medical Colleges, in a brief study of the applicants for residency training, which will develop information toward total and multiple applications, those who drop out of psychiatric training entirely and will provide an opportunity to study various groups in a more specialized way.

It is important to stress again the fact that the function of the psychiatrist in meeting the needs of citizens in the overall

picture is obviously complementary to the efforts and activities of other groups with whom psychiatrists must work. It is also obvious to us all that faced with drastic shortages in the future, in case we are unsuccessful in increasing the number of those practicing psychiatry and even though we alter their major function, may demand a serious reappraisal of ways and means of meeting the needs of the people in our general field, both of prevention and treatment as well as joining with others in the growth and development of health persons.

4. Subjective Impressions of Psychiatric Authorities. Tentative feelers on each of the 6 subjects considered in this exploratory year have been sent out to a selected list of 100 professors of psychiatry in the United States and Canada, committee chairmen of the APA and state medical societies, district branch offices. These staff memoranda are available in the office of the project for reference.

Responses have been spotty but will be helpful for future studies.

Comments concerning recruiting from persons in responsible positions in training of psychiatrists are of special interest.

It was suggested that placing a student early (perhaps in the first summer) in an investigative role under supervision of an older man who could furnish a stimulating "model" would be most helpful.

Some felt that full-time teachers were essential, and one dean emphasized the ability of a teacher to transmit enthusiasm.

Many felt that the job of the Department of Psychiatry was to give sound and interesting courses to all, some electives as well; there should be presented an overview of psychological and behavioral factors as these permeate health and disease. Some expressed it this way: best recruiting is done by creating a "climate of letting students fend for themselves"; let them "wait and see sick people and decide what interests them most."

One expressed his attitude toward successful recruiting as follows:

Recruitment will be best achieved by increasing the number of graduates exposed to psychiatric concepts, and by integrated teaching emphasizing the treatment potentials of psychiatry as rendering more effective the doctor-

relationship in all of medicine by altering the image of the successful psychiatrist from the analyst removed from the mainstream of medicine to the psychiatrist-physician by making the material taught show less evidence of discordance, conflict and uncertainty.

Others emphasized that the type of student selected might play a part in the number who choose psychiatry. It is of interest here to recall Parker's findings that "anti-authoritative students like best psychiatry, pediatrics and public health" (3); whereas "authoritarian" types preferred surgery, radiology, internal medicine.

Many felt psychiatric recruitment was deterred by rigidity of requirements to enter medical school, and furthered by admission committees dominated by basic science because psychiatrists are too busy to serve. Public psychiatry is notorious for low salaries and petty restrictions.

Where state hospitals present a "model" of psychiatric practices in some locales; in others, old school psychoanalysis represents all psychiatry, an extreme just as bad. Students and public feel "untreatable by psychoanalysis means untreatable by any form of psychiatric therapy," hence hopeless.

It was generally felt that more information on the graduates of medical schools who had gone into psychiatry would be useful. Changing faculty members in all departments was an important variable; changes of attitudes in the 4 years and specific deterrents should be studied.

A serious deterrent towards recruitment in general was suggested in the "confused social attitudes towards the mentally ill," and the fact that public hospitals were overloaded with social misfits, many belonging elsewhere.

A number of discrete topics for special studies were mentioned: studying a sample of residency programs; variety of needs in different localities, regions, states; the history of the psychiatric resident in college and before; his major interests, influential persons; define the area and clarify the need for which manpower is needed.

One person felt that psychiatry was doing as well as other specialties and a number agreed that in many schools those coming

into psychiatry represented the top of the class.

5. *Skeleton of a proposed study.* The following represents an attempt to outline a research study which is restricted to a reasonable portion as it relates to psychiatrists.

MANPOWER PROJECT

PROPOSED AS BASE OF DETAILED AND COMPREHENSIVE DESIGN TO BE WORKED OUT OVER A PERIOD OF 8-10 MONTHS

1. PURPOSE

To study and develop a concerted attack on shortages of psychiatrists.

The national demand for psychiatrists is such that with present treatment techniques it is evident that there is and will continue to be a demand for a greater increase in the number of available psychiatrists.

Despite this widely heralded shortage of psychiatrists, there have been few studies of the dimensions of the shortage: the geographical distribution of psychiatrists, training resources, subspecialist distribution, patterns of utilization of psychiatric time and skills, or of techniques of recruitment. Of further importance is some understanding of the reasons certain medical schools consistently produce rather large numbers of psychiatrists. There is also the question of possible upper limits of specialization in psychiatry in view of the total number of medical school graduates.

During the past eight months, a few exploratory studies have been carried out by the American Psychiatric Association's Manpower Project study group and this would appear an opportune time for greater definition of study design.

It is proposed that the balance of this year be devoted to designing a study to accomplish the following:

A. Systematic compilation and analysis of objective data on

1. Psychiatrists in practice and training
2. Training resources
3. Factors influencing individuals to enter psychiatry

B. Identification of the current and projected demand for psychiatrists

C. The study and evaluation of techniques to increase the supply of psychiatrists.

This investigation will necessarily involve

a series of studies, each to supply information necessary for an understanding of the total psychiatric manpower picture.

II. PROPOSED PROJECT OUTLINE (Tentative)

A. An analysis of the existing psychiatric manpower picture.

1. Collection and compilation of data on the existing manpower picture

a. In the United States

b. More intensively on a local basis. (e.g., in one state, one local and rural area)

2. Analysis and description of the existing picture

3. Identification of questions suggested by these data

For the purpose of this study, a distinction is being made between demand for psychiatrists and need for psychiatrists. The size of the deficit in terms of need must await a careful study of those functions which necessitate the skills of a psychiatrist and the determination of the frequency with which they should be carried out. The present investigation will attempt to deal only with the concept of demand for psychiatrists. The need of these personnel, as previously defined, should be the subject of another study.

Psychiatrist is defined as a physician whose major time is devoted to psychiatric practice, teaching, research, or consultation, administration.

A logical starting point to the broader study of psychiatric manpower is that of examining closely the existing manpower picture.

Data are available from a variety of sources which when appropriately analyzed would yield a more complete picture of U. S. psychiatric manpower than has thus far been presented. Such areas as the following would be studied:

Age and age changes of the manpower pool; sources of supply and their variations; geographical distribution; mobility of psychiatry and directions of change; changes in the picture of foci of concentration; subspecialty distribution; and changes in the ratio between private practice and the variety of employed positions.

It appears desirable to approach this problem on a national, state, urban and a rural

level. A clear understanding of national psychiatric manpower is necessary in order to ascertain characteristics of the total pool as well as shifts within this pool. Furthermore, mobility among psychiatrists is such that state or local boundaries have relatively little significance. There is also an awareness that a rather limited number of training centers provides psychiatrists for the country as a whole and not solely for the areas in which these centers exist. The universe of psychiatrists in this country is sufficiently limited so as to permit a careful study of the total group. For this purpose, it is proposed to extend the American Psychiatric Association's Keysort punch card data to include a greater range of permanent data on all psychiatrists and to utilize IBM equipment so as to make the data more suitable for analysis.

It is apparent, however, that data for the country as a whole do not answer the important questions for an individual state, or for specific urban or rural areas. The variations between such loci are enormous in terms of psychiatric manpower and availability of training centers. Certain states, for example, do not have either a medical school or a psychiatric training center. Within a given state, there may be areas of very high and very low concentrations of psychiatrists, hence for any particular state a more detailed presentation is mandatory to assure an understanding of its manpower situation. Within any state variations may be great between rural and urban areas, each of which may have vastly different problems. A single state, as well as rural and urban area, might be chosen for study in this investigation, with the aim of furnishing models for the use of individual areas.

B. Techniques of increasing the supply of psychiatrists

1. Identification of possible techniques of increasing the supply of psychiatrists

a. Nationally

b. Locally

2. Evaluation of such techniques

It may be anticipated that analysis of the data relative to current psychiatric manpower will suggest a number of techniques for increasing the supply. In addition, a survey of the literature, a review of current practices in recruitment into psychiatry, and a canvassing of authorities for suggestions in this area will also yield other possible avenues on techniques for increasing the supply of psychiatrists. It

It is hoped that such a compilation of techniques to make a careful analysis of their relative merit and effectiveness.

C. Future projects and studies

1. Studies indicated but not included in scope of original project. In considering what the scope of the proposed study should be, many areas of interest were excluded in order to narrow the investigation. As an example, the question of whether the time and skills of psychiatrists are currently being used to best advantage is not included, nor is there included an attempt to measure the effectiveness of present training methods.

2. Studies suggested by project findings. In the course of collecting and analyzing study data, it is expected that topics requiring separate investigation will be developed.

3. Operational studies to test findings and conclusions. Both during the course of and following the study, changes might be tried out on an operating basis. Information can be made available to individuals and organizations concerned so that they may follow up as they wish. For example, if it should appear that the hypothesis that summer placement of medical students in state hospitals results in a greater movement of psychiatrists into state hospitals, co-operative ventures between medical schools and state hospitals can be arranged to further test out findings.

Budget:

Remainder of Calendar Year-1959

Consultants (per diem and travel), secretarial assistance, supplies. This includes 3 psychiatrists in addition to Dr. Blain, a sociologist, and a personnel administrator (all in California) as well as the existing Advisory Committee. This is cited as a conservative sum for the remainder of the calendar year

\$ 8,000

Continuation of studies of residents and other pilot investigations in progress.

4,000

TOTAL \$ 12,000

SUMMARY

In summary, may I state that with the help of a number of consultants who have contributed a total of approximately \$27,000, the first year has proved to be largely a matter of exploration rather than definition. A large number of interesting contacts with leading professional groups have been made. A tremendous amount of interest has been developed in the study. Many suggestions have come toward modifying it in one direction or another, perhaps most important has been the suggestion that since this is such an enormously important project, it must be done well or not done at all.

The activities of the consultants have been extremely helpful. It has been of particular interest to note that the highly successful National Manpower Council working with Dr. Ginzberg and his associates also came to the end of their first year remarking that, in spite of careful planning, the first year had turned out to be largely exploratory.

Of great interest was Dr. Ginzberg's remark that no definitive plan for approaching manpower studies had yet been developed.

The conclusion after 8 months of effort with a small staff is that the time is now come to enter into an intensive effort over a number of months, mainly to design a series of studies and operations which will, in time, enable progress to be made in this problem. Accordingly, a staff of competent technicians in research design, psychiatric and sociological personnel with clinical and teaching experience will work with the national consultants to produce such a program as may receive financial support over such a period of time as necessary for this important subject.

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THE DEVELOPMENT OF AN EFFECTIVE STATISTICAL SYSTEM IN MENTAL ILLNESS

ANITA K. BAHN²

Mental illnesses constitute a public health problem of considerable magnitude, but data on the exact dimensions of the problem, the prevalence by time and place, and the relative risk of occurrence for various population groups are greatly limited. Recently I had the opportunity to review the history of the national collection of mental illness statistics in this country. It is interesting to note the evolution of the public approach to this problem.

The 1880 census of the United States attempted to count "the number of mentally ill and defectives not only in institutions for their care, but also in jails, almshouses, other institutions and at home." By 1904, the census was limited to the "insane and feeble-minded in institutions; those outside institutions were excluded on the grounds that their number could not be enumerated." Beginning with 1923, the Bureau of the Census, and later the Public Health Service, has conducted separate annual surveys of patients in mental institutions and in institutions for mental defectives and epileptics. As a postlude to the development of outpatient psychiatric clinics since the turn of the century, in 1954, a national reporting program on the outpatient psychiatric clinic population was initiated by the National Institute of Mental Health in cooperation with state mental health authorities.

Today, our long-range objective in the collection of statistics coincides with that original goal in 1880. There is recognition that a complete descriptive count of the mentally ill, whether or not seen in a psychiatric facility, is needed for epidemiological studies and for programming of mental health services. But today, we plan to achieve this goal in a more scientific and sophisticated way, using objective criteria and validated evidence of mental illness.

We are still far from such an accomplishment, which must be approached systematically through successive and progressively more difficult stages.

It is likely that Maryland will be one of the first states to take certain major strides towards this goal, and that it may serve as a model statistical laboratory for studies elsewhere. In an intensive methodological study this past year on the outpatient psychiatric clinic population in Maryland, with the assistance of the Johns Hopkins University School of Hygiene and Public Health, some of the problems of definitions and data collection in this field were resolved. Reports were obtained on every Maryland resident seen in an outpatient psychiatric clinic.

This is no small achievement, considering that some 60 clinics participated in this reporting system, submitting data on about 10,000 patients. This accomplishment reflects the fine cooperation of the personnel of the clinics and of the various program agencies for mental health: the State Health Department, the State Department of Mental Hygiene, the Baltimore City Health Department, the Veterans Administration, and the National Institute of Mental Health. As a result it is possible for the first time to compute rates of admission to and discharge from outpatient psychiatric clinics by demographic and diagnostic characteristics, to enumerate the number under clinic care at any specified time, to determine how much and what kinds of services outpatients receive, and the disposition made. These data will continue to be collected to provide information on changing patterns of services for the mentally ill. We are now preparing a comprehensive analysis of the data collected for the first year.

In addition to the reports on its own institutional population, the State Department of Mental Hygiene plans to obtain reports from the Veterans Administration psychiatric hospital, all private mental hospitals, and general hospitals which treat

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of these patients who are Maryland residents.

These are the first stages in the collection of research information on the distribution of mental disorders in a state or community. What is the next step? Those who are familiar with services to the mentally ill will recognize that although data on outpatient and inpatient psychiatric services are essential for mental health program planning, there are limitations to the usefulness of separate statistics for each type of facility. Today, hospitalization or clinic visits may be only one of a long series of psychiatric experiences for an individual. A person may be referred to an outpatient psychiatric clinic for diagnosis, admitted to a hospital, discharged to outpatient follow-up care, perhaps readmitted to a hospital and so forth. Changes in treatment methods and hospital policies, and increases in the number and kind of psychiatric facilities—open hospitals, day and night hospitals, half-way houses, psychiatric wards in general hospitals—have resulted in a more complex and fluid service pattern designed to meet more of the particular needs of the mentally ill.

What is the research implication of these changes in mental health service programs? The rate of first admission to state mental hospitals is less and less useful as an index of the incidence of serious mental disorder. We can no longer look at only one psychiatric experience of an individual for meaningful study of the epidemiology of mental disorders or of the psychiatric care received. Without collation of information reported on the same individual by different facilities, it is not possible to answer the following kinds of questions: What is the unduplicated count of individuals by age, sex, color and diagnosis who are admitted to, discharged from or under the care of a psychiatric facility within the year? What number of individuals are admitted to a psychiatric facility for the first time this year? What is the relative risk of admission for each population group? What proportion of individuals diagnosed for the first time in a psychiatric clinic is subsequently admitted to a psychiatric hospital within X years after clinic discharge? Is the number and composition of the psychi-

atric population seen in psychiatric facilities fairly representative of the state, or are there substantial differences and changes each year? Are there any urban-rural differences in admission rates and subsequent psychiatric experience?

The next research step that is essential is the development of a coordinated research file on the inpatient and outpatient psychiatric population. Prerequisite for such a file is reporting by all of the psychiatric facilities in an area on each admission and discharge, including reporting of the patient's name. The sole purpose of the file would be the effective utilization of the routine reports from psychiatric facilities for epidemiologic and administrative research. Plans are underway for such coordinated research on all known psychiatric patients in the state. The following types of statistical studies are contemplated:

Incidence of diagnosed mental disorder by psychiatric classification, age, sex, color and urban or rural residence, based on number of individuals who are first reported under care of a psychiatric facility during a year.

Diagnosed prevalence based on unduplicated counts of patients under care of a psychiatric facility as of a given date or during some defined interval of time.

Longitudinal or followup statistical studies of diagnosed cases, based on routine reports received from psychiatric facilities. This will include, for example, study of changes in diagnosis and psychiatric care for individuals who come into the psychiatric population at different ages, probability of readmission to a psychiatric facility within a specified period after discharge, etc. Thus we may begin to obtain more definitive data on the natural history of the various types of mental illness.

Estimates of the psychiatrically ill population known but not under care during the year, based upon various assumptions with regard to duration and activity of the illness, sample studies of records of the social service exchange, etc.

Special research such as genetic studies and studies of the relation between reported psychiatric illness and suicide and police cases.

These statistics will be available not only on a statewide basis but also by county so that health officers can know the magnitude and characteristics of diagnosed mental illness in their locality.

CONCLUSIONS

There are many reasons why the study of mental illness in the community is a difficult task. The first is the lack of a clear definition of mental illness. The second is the lack of a clear definition of the community. The third is the lack of a clear definition of the methods to be used. The fourth is the lack of a clear definition of the personnel to be used. The fifth is the lack of a clear definition of the data to be collected. The sixth is the lack of a clear definition of the analysis to be used. The seventh is the lack of a clear definition of the interpretation to be used. The eighth is the lack of a clear definition of the conclusions to be drawn. The ninth is the lack of a clear definition of the implications to be drawn. The tenth is the lack of a clear definition of the recommendations to be made. The eleventh is the lack of a clear definition of the funding to be used. The twelfth is the lack of a clear definition of the support to be used. The thirteenth is the lack of a clear definition of the cooperation to be used. The fourteenth is the lack of a clear definition of the communication to be used. The fifteenth is the lack of a clear definition of the dissemination to be used. The sixteenth is the lack of a clear definition of the evaluation to be used. The seventeenth is the lack of a clear definition of the monitoring to be used. The eighteenth is the lack of a clear definition of the reporting to be used. The nineteenth is the lack of a clear definition of the accountability to be used. The twentieth is the lack of a clear definition of the transparency to be used. The twenty-first is the lack of a clear definition of the integrity to be used. The twenty-second is the lack of a clear definition of the honesty to be used. The twenty-third is the lack of a clear definition of the fairness to be used. The twenty-fourth is the lack of a clear definition of the justice to be used. The twenty-fifth is the lack of a clear definition of the equity to be used. The twenty-sixth is the lack of a clear definition of the equality to be used. The twenty-seventh is the lack of a clear definition of the freedom to be used. The twenty-eighth is the lack of a clear definition of the security to be used. The twenty-ninth is the lack of a clear definition of the privacy to be used. The thirtieth is the lack of a clear definition of the respect to be used. The thirty-first is the lack of a clear definition of the dignity to be used. The thirty-second is the lack of a clear definition of the autonomy to be used. The thirty-third is the lack of a clear definition of the self-determination to be used. The thirty-fourth is the lack of a clear definition of the self-respect to be used. The thirty-fifth is the lack of a clear definition of the self-worth to be used. The thirty-sixth is the lack of a clear definition of the self-esteem to be used. The thirty-seventh is the lack of a clear definition of the self-confidence to be used. The thirty-eighth is the lack of a clear definition of the self-reliance to be used. The thirty-ninth is the lack of a clear definition of the self-sufficiency to be used. The fortieth is the lack of a clear definition of the self-actualization to be used. The forty-first is the lack of a clear definition of the self-fulfillment to be used. The forty-second is the lack of a clear definition of the self-achievement to be used. The forty-third is the lack of a clear definition of the self-actualization to be used. The forty-fourth is the lack of a clear definition of the self-fulfillment to be used. The forty-fifth is the lack of a clear definition of the self-achievement to be used. The forty-sixth is the lack of a clear definition of the self-actualization to be used. The forty-seventh is the lack of a clear definition of the self-fulfillment to be used. The forty-eighth is the lack of a clear definition of the self-achievement to be used. The forty-ninth is the lack of a clear definition of the self-actualization to be used. The fiftieth is the lack of a clear definition of the self-fulfillment to be used.

New let us look no longer still further and to other progressively more difficult stages. The individuals who go to psychiatric facilities now represent a highly selected sample of those mentally ill. We know that there are long waiting lists for admission to some clinics, that not all those referred to a psychiatric facility go there, that psychiatric illness may be undetected. The availability of psychiatric and other community facilities, number of hospital beds, and admission policies are selective factors affecting the number and kinds of patients seen.

Therefore, a still more advanced stage of research on the distribution of mental disorders is to broaden the base of our data in at least some communities. This means reports from private psychiatrists, gen-

eral practitioners, and marriage counselors. Sample household interviews represent a still finer screen device for case finding of mental disorders in a total community study.

Some very difficult methodological problems are inherent in such studies: the definition of mental illness, case finding methods, the determination of the approximate date of onset of the disorder and its duration and presence or absence at any time. Despite difficulties, these problems must be solved in order to answer a basic question: What is the relationship between cases of the mentally ill seen in psychiatric facilities and mental illness in the general population?

Several one-time community studies have already been carried out or are under way. Studies in Yorkville, New York and in Toronto, in Canada are recent examples. There have also been two well known surveys in Baltimore: the study in 1951 of mental illness in the Eastern Hospital District by Lemkau, Tietze and Cooper, based on medical and social agency records, and a study in 1952 of mental illness and other chronic disability by the Commission on Chronic Illness, based on household survey and clinic examination of a population sample.

I hope that within several years, a study can be made on a continuing study of psychiatric illness in some Maryland community or communities based on case finding methods applied to the general population. Such a study could provide more complete epidemiologic information than studies based on the psychiatric patient population alone. In addition, if continued for a number of years, such a study could provide for the first time prospectively collected data on the natural history of mental disorders.

FURTHER DEVELOPMENTS IN THE DAY HOSPITAL

T. J. BOAG, M.D., C.M.B.

The Day Hospital at the Allan Memorial Institute was the first in the field. After 12 years of operation it exhibited difficulties which required an extensive reorganization. In the course of this we examined the basic premises on which it operated, and took advantage of an excellent opportunity to review the history of the day hospital as an institution, and the place it occupies in the field of psychiatric practice.

HISTORY

The many arguments which have been advanced to support the notion of the day hospital fall under 3 main headings, namely, economy, preservation of the family group and community contacts, and minimizing the ill effects of hospitalization—principally over-dependency.

If one looks at how day hospitals actually came to be set up they have developed in 3 different situations.

1. As a new part of an existing hospital, where something less than full inpatient admission is desired. This approach is mainly identified with Cameron(1).

2. As a development from social clubs and similar organizations when it is found desirable to provide more treatment facilities. This is seen in its clearest form in Great Britain and is identified with Bierer(2) who apparently adopted the name day hospital from Cameron.

3. As a manifestation in the terminal phases of hospital treatment of inpatients, as described, for example, by Gilmore(3) and by Barnard *et al.*(4). Developments of this type have tended to remain informal and have not stimulated interest and growth to the same extent as the first two.

The first psychiatric day hospital as such, was opened by Cameron(1) in 1946. There had been informal forerunners of this experiment, for instance in 1935, Woodall(5) treated neurotic patients at Adams House

at 11, Albert Street, Cambridge. In 1936, John Smith(6) of the House of Commons introduced the principle of the day hospital in Great Britain as far back as 1938 but no other examples of this can be found. There is also a record of a social club for old people in New York in 1937 which gave psychiatric consultation(7). During the 1930's, in England, Bierer(8) was advocating the same goal for a different reason. From 1940 he began to think of his therapeutic social clubs as hospitals, and in 1946 he opened in 1948 as a separate institution independent to any parent hospital. Other developments in Great Britain have resulted in Bierer's plan(9) which followed a similar development(8). Others have been modelled on Cameron's earlier hospitalization, those at the Maudsley and the St. George's Hospitals described by Harrison(10) in North America after a few years there, and the steady spread of day and night centers now set up in the Yale Psychiatric Clinic in 1948-49(3). McLeod(11) at the Montreal General Hospital has described a day hospital modeled on Cameron's but adapted to a student setting, and has expanded it in the form of a day center so that the same space is utilized throughout the 24 hours. In 1958 the Day Hospital Conference organized by the American Psychiatric Association(12) underlined the rapid development and the multiple applications of this concept in many areas of psychiatric endeavor. To complete this brief historical sketch one should note that this new therapeutic setting is being adopted by other branches of medicine. Cosin(13) set up a Geriatric Day Hospital in Oxford in 1955 and in the Royal Victoria Hospital a 20-place day hospital for patients in the Department of Internal Medicine is a part of the current building program.

THE DAY HOSPITAL AT THE ALLAN MEMORIAL INSTITUTE

The day hospital at the Allan Memorial Institute had remained relatively un-

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changed in its structure and functioning, other than an increase in patient load and some improvement of quarters, until 1958 when it was extensively re-organized, as I shall describe. Some aspects of these changes have already been reported elsewhere (14, 15). From the start in 1946 the day hospital was set up as a consciously planned experiment in the provision of a new treatment setting. It was an integral part of the Institute and accounted for a sizeable proportion of the patient load. At the start, with 20 places it carried one third of our hospitalized patients. In 1954, when the Institute expanded, the day hospital grew to 40 places maintaining the same ratio.

To convey a clear picture it is necessary to outline the overall setting. The Allan Memorial Institute is, itself, part of a general hospital. The Institute is entirely open. At the most, about one-quarter of our day hospital patients have been transferred from the inpatient side. The day hospital does not operate only as a half-way house on the way to discharge but as one established resource in the hospital with its own sphere of usefulness. Patients are transferred actively in and out of it according to their current requirements. All forms of physical treatment are available on the day hospital except deep insulin coma. Patients are not selected in terms of diagnostic category. The principal criteria are their ability to travel, and the feasibility of their continuing to live at home during treatment. At times when there is a large waiting-list for inpatient beds, it is necessary to treat seriously disturbed patients who would normally be admitted day and night. As well as drawing on the general services of the Institute, clinical responsibility for patients is divided among 4 public ward services, each of which has patients on all wards, including the day hospital. This division of medical responsibility for the group as a whole, means that the nurses on the day hospital occupy a central position in its social structure (14).

REORGANIZATION

The reorganization in January 1958 was brought about by difficulties of which we

had become increasingly aware during the previous two years. In spite of the demonstrable usefulness of the day hospital over the years and the devising of techniques to manage a wider range of patients we had begun to experience growing difficulty in maintaining an adequate level of occupancy. We were well aware of a number of contributing factors which were beyond our control. There had been a steady growth of other psychiatric facilities in the city. The major hospital insurance schemes refused to recognize the day hospital for insurance payments so that treatment there cost an insured patient more out of pocket than if he was admitted. We had developed a range of ambulant treatment facilities in the Institute and these were to some extent competing with the day hospital. A further reason, of which we were not aware when the reorganization started, but which became obvious as it proceeded, was the need to formulate a program on the day hospital which was specific to it, and therefore, capable of attracting its own category of patients. With some slackening of the pressure for admission due to the first 3 causes, this last became decisive.

The reorganization primarily took the form of integrating within the day hospital the other ambulant treatment facilities which had developed separately. We had developed a program of outpatient follow-up psychotherapy to deal with problems that had been investigated, defined and initially worked on during the patient's brief stay in hospital. The new organization enabled us to co-ordinate this therapy with other elements of a more extensive therapeutic program. We had, many years before, established a therapy unit, which provided physical treatments for outpatients. We had found it useful in the therapy unit to institute an evening clinic where these patients could come after work, usually for ECT or somnolent insulin, thus avoiding time off work. The special schizophrenic follow-up program aimed at maintaining therapeutic contact with our schizophrenic patients throughout a long period of rehabilitation—a minimum of 2 years and much longer in some cases. Another special group of patients chosen for long-

patients were those who had experienced recurrent depressions, usually in the mild-depressive group with repeated admissions and disruptions of home life and work. These patients are carried in prophylactic ECT as originally described by Stevenson and Geoghegan (16). We eventually extended this to recurrent and relapsing depressions in the involuntary period. More recently we have set up a similar group of geriatric patients who are followed over a prolonged period. Another activity which was integrated was the use of the occupational therapy department. This had become increasingly used for patients to follow up a new interest developed in hospital, on a part-time basis following discharge from the phase of intensive inpatient treatment. Here an increasing number of old people attended regularly as groups. In addition to normal case work, there had developed within the social service department a special volunteer program which provided well-motivated and suitable volunteers who extended the help of a friendly relationship to patients who specifically needed this during the post-hospital phase of resettlement.

Other activities within the hospital, while not actively integrated in the program, were closely coordinated with it when required. These included referral to small, closed, long-term psychotherapeutic groups in the extension department and membership in our ex-patients' social club. Co-operative ventures with various outside agencies provided us with help, e.g. the rehabilitation centre for vocational problems, and a program established with the help of the Victorian Order of Nurses to provide a home visiting service for patients on ambulant treatment.

These activities had grown to the point where they needed space and staff which simply were not available. An initial advantage of integration was the creation of a larger unit within which space and staff could be used more flexibly and efficiently. An ultimately more important advantage was making these services readily available in combination with one another or with some part of the full-time day hospital program. We aimed at providing services

on a continuum from full-time day hospital care (9 a.m. to 5 p.m. 6 days a week) to occasional, widely spaced visits. A continuum of treatment could be developed to fit the needs of each patient. In formulating the range of services it was necessary to define the limits of the continuum. At one end it faded off into complete loss of contact with the hospital, but at the other we had to make some statement as to the services that should be provided for full-time day hospital care. In doing this we were led to a reformulation of the basic premises underlying management of the full-time day hospital setting and, subsequently, to radical changes in the setting. These changes set up **new sequences of change** which had not **been predicted at the start**.

At the time, our prediction was that it might shrink still further or might even cease to exist, being replaced by more and more part-time treatment. However we had to consider what the characteristics of such a full-time setting should be and whether it was possible to devise a program that would be specific to it, and different from an outpatient clinic, on the one hand and full-time inpatient treatment, on the other hand. It was clear that we must provide for orthodox "medical" treatment including physical treatments, sedation, adequate physical examination and investigation, care of confused patients, etc. These were necessary parts of a comprehensive treatment program, and, in addition, we had to care for a certain number of disturbed and confused patients awaiting inpatient beds. However, in these traditional activities there lay the risk of provoking excessive dependency needs. The absence of a bed disrupted the traditional roles of the hospital patient and of the nursing staff. Activities oriented around bedside nursing were not appropriate to the situation of a patient on the day hospital, and it was necessary to put something in their place if healthy interactions were to be possible. We started with the working assumption that for the majority of patients referred to the day hospital the development of multiple relationships within a group was not only possible, but was also therapeutically desirable. It was therefore

necessary to foster development of a strong democratic group structure on the ward, the activities of which led away from dependence on the hospital, and towards establishment of progressive defences, and independent and responsible functioning. Such development was conceptualized as occurring in 4 steps.

1. Undertaking activities together so that a structured group with strong relationships between its members could, in fact, develop.

2. Discussion of these activities and verbalization of the emerging interactions.

3. Interventions by the staff lending support and prestige to the idea of progression towards independence and encouraging a "psychological" attitude, i.e. perception of daily events and interactions on the day hospital as an acting out of the patients' internalized conflicts.

4. Working toward reality solutions, in the spheres of work, family life, development of new sublimations, etc.

In practice, these changes were implemented by the introduction of a program of group activities which later developed and changed as the day hospital developed a social structure of its own and methods of expressing demands and formulating new institutions to satisfy them.

First, and most important of these activities was the discussion hour. This took place daily from 1 p.m. to 2 p.m. and was attended by all patients who could be persuaded to come and all nursing staff who were free. It was conducted by the head nurse, the central figure in the social system of the day hospital. In so far as the discussion hour served as the principal arena within which the issues of life on the ward could be thrashed out it was important that her role within the group conform to the reality of her day-by-day position in the day hospital. We did not expect the nurses to offer deep interpretations of unconscious behaviour. Their general aim was to orient patients towards understanding, towards rehabilitation and independence, and to the use of other sources of help available in the hospital.

Other groups met less frequently, usually weekly, and by and large served the purposes of Step 4, i.e. working towards real-

ity solutions. A socio-drama session was devoted to acting out current situations on the day hospital or from life outside. For patients who were not ready to deal with current reality situations, the showing of psychiatric movies offered more neutral visual stimuli and opportunities for identification. On the basis of individual need, patients were referred to a number of special groups under the leadership of social workers, each dealing with a particular problem area. For example, the "work group" dealt with problems of employment, not only realistic difficulties in obtaining work and the offering of direct help and guidance in this, but, also, such questions as the meaning of work in our society, and the specific blocks and difficulties of individual patients. Another such group dealt with family problems and another with problems of social isolation.

Other activities were started with the help of the occupational therapy department and volunteers utilizing social and diversional content to structure the group and its daily routine.

These examples must suffice to give some idea of the content of the program.

RESULTS

During the early stages, we were concerned about the effect on the group structure of the day hospital of dilution with large numbers of part-time patients and the disruption of activities by the increase in traffic. We feared that the group might disintegrate under these conditions so that we would be left with a heterogeneous collection of patients, meeting one another irregularly, and developing only tenuous relationships. However, there were also signs that the group, faced with this threat to its existence, began to tighten its boundaries, became more exclusive, and emphasized the differences between full-time day hospital patients and part-time patients. Before the precarious balance between these two effects was resolved it ceased to be a relevant issue, as a new and unexpected phenomenon appeared. The initiation of the activity program among the full-time patients produced a remarkable revitalisation of this group, and a period of rapid growth commenced. The new ac-

tivities served as a framework within which numerous developments occurred and these were accompanied by a rise in occupancy and an upsurge of new referrals. Within 3 months, we had, for the first time in years, a waiting list for full time admission. The improvement in morale showed itself, not only in patients, but also in the staff. Staff members who had initially been skeptical and resistant were won over and became active participants. Its relevance to the needs of patients was attested not only by the more numerous referrals but also in the increased readiness of patients to accept treatment on the day hospital and to maintain their attendance.

These changes, of course, had their impact on other parts of the hospital. The day hospital acquired a new prestige and patients were increasingly willing to be transferred to it. Patients on other wards pressed to join in activities set up on the day hospital and to adopt them on their own wards. The program stimulated interest among nursing staff in the possibilities of milieu therapy on other wards.

These rather dramatic developments have overshadowed to some extent the other changes and the consolidation of a smooth and more flexible integration. Other unpredicted factors which have influenced the situation are the use of tranquilizers and the recent introduction of safe and effective anti-depressant drugs which have diminished the number of physical treatments given. These developments have served to emphasize the need to maintain flexibility and an open mind to new developments. They emphasize the importance of setting up new services in such a way that they are not rigidly tailored to the apparent needs of the moment, but can grow and respond to the changing patterns of therapeutic needs and techniques. The day hospital now offers us the possibility of combining a wide range of different types of treatment into complex patterns which are tailored to the needs of the individual patients and can be readily varied as these needs change. With this resource we can treat many patients who otherwise could not be carried in a short stay hospital.

DISCUSSION

Such changes as I have described must be seen against a wider canvas. Historical developments led to the growth of the day state hospitals in North America which dealt with the largest group of psychiatric patients. More recently another kind of psychiatry grew up, to some extent practiced in clinics, but largely associated with private practice. In a recent paper McIlven and Redlich (17) pointed up the lack of contact between these two areas of practice to the point where we have a different kind of psychiatrist inhabiting each camp. The existence of these widely separated concentrations makes it all the more important to explore the hinterland between them. The day hospital should be seen as one of the attempts to formulate treatment settings which offer more control and protection than office psychotherapy without going to the other extreme of deprivation of civil rights and commitment to a closed hospital. Although others had used such part-time treatment informally earlier, Cameron's setting up of the day hospital in 1946 initiated a new series of developments because it set up an empirically defined unit on a regular and continuing basis, because an attempt was made to delineate for it a particular area of usefulness, because it represented a practicable and self-supporting service which satisfied a community need, and because he devised an elegant and evocative title for it. The considerations adduced emphasize the importance of defining the characteristics of such experimental settings as clearly as possible so that their performance may be evaluated, of formulating a rationale for their mode of functioning, and of setting them up from the beginning so as to encourage the emergence of new permutations and combinations in response to changing needs from within or without.

SUMMARY

The day hospital is one of a series of experiments in devising new psychiatric treatment settings. It has been a useful and productive development. The models created in different centres differ widely in their general applicability, their clinical usefulness, and their theoretical interest.

The first day hospital was set up at the Allan Memorial Institute in 1946 and in 1958 was reorganized to provide services in combinations matched to the individual patients and readily varied as necessary. Coincidentally a re-examination of its social structure led to an activity program which produced marked changes. These changes not only remedied current difficulties operating the day hospital but also greatly extended its range of usefulness.

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HOME TREATMENT OF PSYCHIATRIC PATIENTS¹

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The mental hospital is no longer thought of as the center of treatment where people can be "factory rebuilt." More and more attention is being given to before-care and after-care management of mental illness. Taking account of the therapeutic value of social factors we can speak of "social treatment." The wider implications of such management, together with the work on the cultural and family aspects of mental illness, have helped develop the practice of social psychiatry. In social psychiatry there is an attempt to integrate the process of case finding, referral, diagnosis, treatment and after-care, whether in the clinic, the hospital, the home or the community. Notable examples of programs aiming in this direction exist in Amsterdam, Holland (1), and also Worthing, England (2). In both these instances the cornerstone of the system has been a home visiting service wherein psychiatrists and social workers go directly to the home of patients for emergency care or they may return regularly for treatment and supervision, where indicated.

In September of 1957 a Psychiatric Home Treatment Service, a pilot project, sponsored by the NIMH under the initiation of Dr. Walter E. Barton and Dr. James Mann, was established at Boston State Hospital for that section of the City adjacent to the hospital. This area consists of a lower middle-class residential section, containing 80,000 people. Potential case-finding agents in the area, such as family doctors, social agencies and clergymen, were notified that a psychiatrist and social worker would make home visits to families that had a member with serious mental illness where hospitalization was being considered.

The 3 criteria for acceptance of a case were: residence in the designated area; age 16 to 60; and serious mental illness. The aim of the Service was to provide better management of mental illness at a time of stress and to see if appropriate alter-

natives to hospitalization might be possible.

Clinical personnel originally consisted of a psychiatrist and social worker, but there have since been added another social worker and two psychiatric nurses.

Sixty cases were accepted during the first 15 months of operation. In each instance, the doctor and social worker went to the home of the patient. In the first part of the visit they conducted a family interview with everyone present. Then the social worker went into another room with the rest of the family while the psychiatrist interviewed the patient by himself. Following this, the doctor, social worker, and the whole family again got together to discuss what should be done immediately. The most common decision was that several more diagnostic interviews would be conducted before a disposition was recommended. An effort was made to encourage the patient or family to make use of any agency that had been therapeutic for them in the past. Attention was also given to the social pressures such as financial instability, legal problems, and alcoholism that complicated the management of the mental illness. Both the doctor and the social worker have an opportunity to see the patient in his everyday environment with the people most important to him, and can jointly have a better grasp of the whole problem.

Of the 60 patients referred, 22 came from community agencies and clinics, 19 from family doctors, 12 from the family, 5 from the clergy, one was self-referred, and one from a housing project manager. Of this group, 40% were hospitalized and 60% were able to remain in the community. The majority of those hospitalized were persons with acute schizophrenic reactions, mostly of the paranoid type. Most of the others were psychotic depressives. In one half the hospitalized cases alternatives to hospitalization were vigorously pursued with the use of drugs, frequent home visits, and attempts at outpatient care. When definitive care was not possible at home, the task for the team was to smooth the way to the

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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hospital, to remove the patient's and family's resistance to such a plan, arrange for transportation, and sustain the family and patient if hospitalization had to be delayed. Much confusion and stress can be generated around hospitalization. For example, family doctors report that this is a difficult problem and appreciate a psychiatric consultant who comes to the home much as they would appreciate having a surgeon come down for a question of an acute abdomen. The social worker is also on the home scene to help deal with the family's anxieties and other serious social consequences of the mental illness, as well as the financial problems, the question of child placement and homemaker services.

Sixty percent of the cases referred were able to remain at home. In about half this number, the psychiatrist judged in retrospect that hospitalization was imminent; in fact most of them had been in the hospital in the past. In some instances the family had called the hospital to request admission, and in one case the patient had appeared in the Admitting Room of the hospital. When patients had been hospitalized before, the family and their doctor often think of rehospitalization as the quickest solution to a new crisis. These individuals could be loosely designated as borderline in reference to the severity of their illness and efforts had to be directed to preserving their defenses and sense of reality. In some instances there was the opportunity to deal with those aspects of the family relationship which were aggravating the illness. If psychotherapy was indicated it was necessary to find the clinic or therapist that was available, to convince the patient and the family of the necessity for psychotherapy, and then to keep the patient and the family on an even keel, sometimes for many weeks, until therapy could begin. In other instances the Home Service itself could provide psychotherapy at home to at least restore equilibrium. A great deal of time was spent on the telephone to coordinate the activities of the many agencies needed to solve the complex problems faced by the family and the patient.

About half the people who remained outside of the hospital were judged by the

psychiatrist in retrospect not to have been imminently hospitalizable. The present problems included alcoholism, exacerbations of chronic family conflicts, and the appearance of increased symptoms in those with long-standing emotional problems. Several children in these families were found to be very disturbed. Obtaining treatment for them had been rendered quite difficult in the past by the parents' inability to cooperate in such treatment. In these families the availability of a Home Service is important because of episodic crises and the need to prevent hospitalization which, in the long run, would not alter the basic social pathology. Such people have to be sustained from time to time with visits by the doctor, the nurse, or the social worker.

Case: A 19-year-old college girl refused to leave her home for several months because of severe anxiety, somatic delusions, and fear of losing control of her impulses. She had been in outpatient psychiatric treatment for 5 months but had broken off treatment and was unable to return. Her family doctor tried drugs, without success, and was considering hospitalization when he referred the family to the Home Treatment Service. Joint and separate interviews at home revealed the parents' fear that psychiatric interviews had been making the patient worse. It was decided to remotivate the girl for outpatient therapy and to involve the parents in such a treatment plan. Home Treatment visits were made once a week for 3 months, with the psychiatrist seeing the girl, and the social worker seeing the parents, with frequent family conferences. The girl's symptoms improved and she was able to return to the outpatient clinic which had been kept informed of her progress. The mother was convinced of the need to see a social worker and to participate in the treatment.

Some of the differences between seeing people at home and seeing people at a clinic are worth noting. For example, a patient's initial resistance and motivation to participate in outpatient therapy, necessarily of great importance in the clinic setting, is not a crucial issue for a Home Service. Therefore, persons who are inaccessible to outpatient therapy, or who have broken off treatment and are becoming more ill, can be seen by a Home Service.

Environmental and social manipulations are often hit-and-miss procedures in an outpatient setting; however, in the home, where everyone concerned can be contacted and a personal relationship made to the family, such manipulations are on surer ground and perhaps deserve the name of **social prescriptions**.

SUMMARY

The present report refers to 60 cases seen in the first 15 months of a small Home Treatment Service. The doctor, accompanied by a social worker, functions as a general practitioner-psychiatrist, working primarily in the home and collaborating directly with community agencies. Inaccess-

sible patients can be reached at home for either brief or long-term therapy, and families may be directly involved in the treatment process. Appropriate alternatives to hospitalization can be worked out and numerous agencies helped to coordinate their function in helping a family. A Home Treatment Service also provides an opportunity for mental health education to families, doctors and social agencies around concrete situations and on a personal basis.

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THE MENTAL HOSPITAL : CORNERSTONE FOR COMMUNITY PSYCHIATRIC SERVICES¹

FRANCIS J. O'NEILL, M.D.²

At the last annual meeting of the American Psychiatric Association held in San Francisco, the presidential address contained statements and allegations which have produced tremendous reaction from the members of this organization associated with mental hospitals. Before discussing these statements and their effect upon the care of the mentally ill, I should like to go on record along with most of my colleagues in the mental hospitals as being heartily in favor of the development of diagnostic and treatment facilities at the community level. If one examines the record he will find that the public mental hospitals in the past have been almost the only agencies providing psychiatric services to local communities. Although not required by law, most of our public mental hospitals have in the past recognized the great need for community level facilities and have attempted in spite of meager staffs and other handicaps to provide some form of mental health clinic for the communities served. Few of us will claim that these services have been adequate. However, until quite recently they were almost the only public facilities available for early diagnosis or treatment in the community. We well recognize that early diagnosis and treatment of mental illness at the community level is the great need in psychiatry today.

Our mental hospitals were originally founded with the belief that they could provide short term definitive treatment for mental illnesses. The annual reports of early mental hospitals, reveal this hope expressed as a reality. Mental hospitals vied with each other in publishing high rates of recovery from mental disease. It soon became evident that these recovery rates were not real but rather the result of releasing unrecovered patients who often were readmitted within a few days of discharge. It required almost a hundred years of largely

custodial care before a genuine improvement in the release rates of our mental hospitals occurred. Those of us who are in close touch with developments in the public mental hospital are enthusiastic about the profound changes that are now taking place—changes which I personally believe indicate that the mental hospital will continue to play the dominant role in providing care and treatment for the mentally ill of America in the future. As a result of what is developing in our hospitals, I believe that a general change from custody responsibility to an active treatment program is in the offing.

In this country it has been the philosophy that mentally ill persons who fail to adjust in the community should be cared for in mental hospitals until such time as their symptoms would permit readjustment in the community. The public has not been tolerant of the disturbed mentally ill person in the community. Huge sums of money have been spent for institutional care. But in many instances the amount provided has not been sufficient to permit the public mental hospital to provide more than a token of custodial care.

The lack of definitive treatment facilities within the framework of our mental hospital systems is a result of the backward position of psychiatry in the field of therapy. While other branches of medicine have made tremendous strides in developing therapeutic tools, we in psychiatry have been largely preoccupied with providing custodial care for huge numbers of mentally ill persons. Within the past 10 years, however, there has been a stimulating change. New therapeutic tools are being developed which make it possible to treat fairly adequately substantial numbers of patients who formerly were untreatable.

The slow progress in developing therapeutic tools has been due to the paucity of research facilities. In this area psychiatry is far behind other branches of medicine. Other medical problems have been solved as a result of intensive research. The same

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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will be true in psychiatry. It is significant that we are now beginning to see the development of research units in the mental hospitals in this country. In the past few years, many such units have been established and the benefits from their activity are already being realized. Mental hospital research has been a vital factor in the recent advances achieved in psychiatry. The use of the public mental hospital as a research center is a logical step and should have been developed a long time ago. These institutions carry the load of care of the mentally ill of America. Their resources in research material cannot be matched in any other setting. If effective treatment methods are to be developed they must be developed within the mental hospital.

With the introduction of the concept of liberalization in mental hospital care during the past few years there has been a decided change in the hospital atmosphere. Time does not permit me to go into details concerning the progress that has been made as a result of the concept of the open hospital alone. The enthusiasm with which this progressive step has been accepted by psychiatry and other disciplines is most assuring. However, liberalization of care with its attendant benefits is not something which is accomplished in a vacuum. Its success depends upon the hospital's relations with the community and the integration of hospital and community is an essential element in this new philosophy. As a natural outgrowth of such integration the mental hospital must assume a responsible role in providing community level psychiatric care. Some of our psychiatric philosophers may feel that our mental hospitals are not equipped to play this role. If they are thinking of the hospital of 10 years ago they are probably correct. The newer concept of the hospital's responsibility to the community is, I believe, well-illustrated by what has been going on in many areas in Great Britain and to a lesser extent in the United States in the past 10 years.

British psychiatry 10 years ago was faced with the same problems as psychiatry in America. Their institutions were largely custodial and isolated from the community served. As a result of social changes and under the leadership of some inspired psy-

chiatrists many of the British public mental hospitals have developed community mental health services which provide a total mental health program with the mental hospital as a center. Those of us who have been fortunate enough to see these British programs first hand are assured that the public mental hospital has an important role to play in community psychiatry.

Critics may point out that there is a difference between the mental hospital system of Britain and that of the United States. In general our hospitals are larger and to some extent more isolated from their catchment areas. This is a distinct disadvantage but not an insurmountable one. Communication and transportation are changing so rapidly that distance is not the formidable barrier of the past. If one examines the location of our public mental hospitals it is found that many of them are in heavily populated areas and well-situated to deal directly with their local communities. The greatest difficulty is that confronting the large metropolitan hospitals, which are frequently located some distance from the areas served. Integration of these hospitals into a community program requires extensive planning and perhaps reorganization. This same problem confronted British psychiatrists in London. They have found a partial solution in the development of extensions of the mental hospitals in the heavily populated metropolitan districts. Perhaps we will be able to follow their example although admittedly this is not an easy problem to solve.

In general, community mental health services in Great Britain have been developing around their public mental hospitals. The staff of the mental hospital services the community clinics, day-care center and welfare homes and provides psychiatric consultation to the psychiatric divisions of the general hospitals. The fact that medicine is socialized in Britain has undoubtedly facilitated the development of this well-integrated total community psychiatric service.

There are several outstanding examples of total community mental health services centered around mental hospitals in Great Britain. Most of them have many elements in common but all of them have the ob-

jectives of providing easy access to psychiatric care. These programs tend to encourage a continuity in patient care whether it is rendered in the home, in a community facility or in the mental hospital. The development of these hospital-centered community programs has profoundly changed the structure of the hospitals associated with them. Admission rates to hospitals have greatly increased, duration of hospital residence has been shortened and early diagnosis and treatment appears to be a reality.

As an example of what has happened to a mental hospital with a good community program, may I take the liberty of pointing to one British institution, Mapperley Hospital in Nottingham. The community program associated with this hospital has been built up during the past 10 years. Mapperley is a relatively large hospital for Britain, having about 1,100 beds. It is completely open with almost 100% voluntary patients. The average stay of a newly admitted patient is about 4 weeks. The members of the staff of the mental hospitals carry responsibility for a community program including a variety of clinics, domiciliary consultations and psychiatric services in the general hospital. Prior to the institution of the community program, Mapperley admitted less than 300 patients a year, during 1956 the admission rates had increased to over 1,500 patients a year. In spite of this, the actual number of patients in the hospital had decreased from 1,100 in 1945 to 1,050 in 1956. From this it can be seen that where the mental hospital is a center for community psychiatry there may actually be a decrease in the population of the hospital in spite of a tremendous increase in yearly admission rates.

In the United States several of the states have begun to develop community mental health services. For the most part, however, the existing mental hospitals are not part of this new development. To me this is an unfortunate trend. If we are to provide community psychiatric services geared to future development of treatment methods, there should be a close integration of all public health services. Our established mental hospitals with their professional staffs, training facilities and diagnostic

equipment should be a logical center for these new services and would undoubtedly be able to bridge some of the serious gaps which now impede their development. Such an arrangement would not necessarily interfere with the private practice of psychiatry which is developing so rapidly in this country. Safeguards should be built into these programs so that those who are able to go for private psychiatric care would not be diverted from private facilities.

The present trend toward development of community level psychiatric care is an encouraging one. Any attempt to separate such programs from existing mental hospital programs would set up artificial barriers between the community and the hospital nullifying many of the hard-won achievements of recent years in hospital-community relations. Public education is making acceptance of psychiatric treatment a reality. It would certainly be a step backward to undermine this growing public confidence through the establishment of a confusing and completely illogical dichotomy in psychiatric services.

In the light of our present knowledge, we must recognize that there are a substantial number of mentally ill persons who develop chronic diseases even when early diagnosis and treatment is available. Dr. Solomon in his address indicated that he was of the opinion that new facilities should be established devoted to care and custody of the chronic psychiatric patient, largely divorced from psychiatric care and supervision. This suggestion is probably the most difficult for the mental hospital psychiatrist to accept. We have been dealing with the chronic patient for a long time. Those of us who have been in institutional psychiatry since before World War II recognize that there is now a distinct change in prognosis of the chronic patient. Cases formerly considered hopeless are now being successfully treated, although not totally recovered, as a result of one or another of the treatments available. Many patients with prolonged hospital residences are being returned to the community in an improved condition. The tranquilizing drugs are playing an important role in this development. Mental disease in general has a tendency toward chronicity. If we are to follow Dr. Solomon's suggestion

not abandon the chronic patient to some other person, we would be false to our social responsibilities. This is not dissimilar from the suggestion that cancer is curable. Our hope for successful treatment of mental illness lies as much in the development of effective treatment for the chronic patient as the development of community facilities for early diagnosis and treatment. The chronic mental patient is a medical responsibility and I am sure that American psychiatry will not abandon him to the care of educators, public health persons, sociologists or city planners as recommended by Dr. Solomon. I hope that we have passed the stage of therapeutic nihilism in psychiatry. To give up our responsibility for any segment of the mentally ill population would be to return to the dark ages.

Admittedly, our mental hospitals are suffering from the lack of professional personnel at all levels. This I do not believe is the fault of the hospitals but rather an indication of economic circumstances and perhaps a changing attitude on the part of physicians in general. I do not want to be put in the position of criticizing my own profession but there are indications that physicians in general are becoming more interested in the economic return in practice than they were a few generations ago. Local communities are having to establish emergency medical services because physicians do not appear to be assuming their full responsibility for answering the call of the sick person regardless of economic circumstances. Public opinion polls indicate that the economic interests of the physician have materially lowered his status in the eyes of the public. In general, medicine is no longer looked upon as a calling of service but one of economic security, and service in the public mental hospital is not eco-

nomic ally attractive to the graduates of American medical schools. Perhaps this is the fault of our governing bodies. I have personally felt for a long time that to attract better qualified persons to the field of psychiatry, we would have to compete salary wise with private practice until such time as there is again an oversupply of medical graduates. I am sure that the mental hospitals have much to do to make their services attractive to young graduates. The development of a total community program around the mental hospital would certainly eliminate many of the professional handicaps of the past.

In closing, may I say that the mental hospital psychiatrists have been greatly disturbed by what they believe is unjust criticism of their professional work. Ten years ago we might have accepted this criticism without response as it would have been justified. Today, however, our mental hospitals are undergoing such a profound and progressive change as a result of the several new developments previously mentioned that we cannot accept this type of criticism as valid. For many years mental hospital psychiatrists have worked to develop public confidence and to achieve the highest possible level of service in the community and in the institution. Much of their achievement has been against great odds. It is time for us to be realistic. We must not wipe out what has already been accomplished. There is room in psychiatry for difference of opinion but we should not permit these differences of opinion to destroy public confidence or to impede the development of adequate services to the mentally ill person, whether his illness is incipient, acute, or chronic. There may be schisms in psychiatric philosophy, but there must be no schisms in service.

A PROPOSAL FOR A COMMUNITY-BASED HOSPITAL AS A BRANCH OF A STATE HOSPITAL.¹

WILFRED BLOOMBERG, M.D.²

On any given day there are, in the publicly supported hospitals for mental diseases of this country, between 600,000 and 700,000 patients. An enormous number of these patients have been hospitalized for many years. There is repetitive evidence that once a patient has remained in a large mental hospital for two years or more, he is quite unlikely to leave except by death. He becomes one of the large mass of so-called "chronic" patients.

If one believes, as I do, that this "chronicity" in mental illness is a reflection, not of the nature of the disease, but of the attitudes of family and community, and, later, of the structure of the hospital and the methods by which we care for such patients, one is confronted with a problem which many of us as psychiatrists have refused to face realistically. I am aware of the progress that has been made in many places in creating movement among this group of so-called chronic patients. From the time of Dr. Abraham Myerson's "total push" technique to the recent emphasis on "remotivation," many and varying efforts have been made. Tranquilizing drugs, physical methods, group psychotherapy, modification of wards into "therapeutic communities," patient self-government, and many other devices have been advocated with greater or lesser enthusiasm as a means of moving such chronic patients out of the hospital. And, unquestionably, all of these methods have some effect. The enthusiasm of a young staff member who builds a team in a "back ward" and succeeds in improving the behavior of the patients and getting 5 or 10% of them home is commendable and unquestionably socially useful.

I say, however, that we are unrealistic in our approach to this problem because we have not given sufficient thought to the next 600,000 patients who will be admitted

to our hospitals. We cannot, of course, ignore our responsibility for the care and the treatment, so far as we know how to administer it, of the patients we already have. I suggest that we have an even greater responsibility to the patients who will be coming to us in the next few years to use all the knowledge that we already have to prevent them from becoming a second group of "chronic" patients numbering 600,000 to 700,000.

Even as psychiatrists we have suffered from the limitation of tradition. We were so convinced that schizophrenia is a long-term chronic illness that when we began to see, during the war, large numbers of acute schizophrenics evacuated from theaters of operations and apparently recovered by the time they reached the zone of the interior, we decided they were not really "schizophrenia." Instead of realizing that this, too, might be schizophrenia, seen in an acute phase because patients were under observation early, were exposed to exaggerated stresses, and could not be carried along for many months by indulgent families, we decided that this must be a different kind of disease because it wasn't chronic. We refused to draw conclusions about schizophrenia as a disease from the things that we were seeing.

It has been shown over and over again, in many different and disparate places, that with proper staffing and proper facilities, 85 and even 90% of first admissions for mental illness can be returned to their homes and their communities in 4 to 6 months. As a matter of fact, when we look at the situation clearly in the light of our overall medical knowledge, we should be proud, as psychiatrists, to be able to point out that of all the so-called long term chronic illnesses, the mental diseases seem to be the most reversible. Our internist colleagues have not yet discovered how to replace the damaged kidney cells in a chronic nephritis, or the damaged liver cells in a cirrhosis of the liver. They are quite content with their

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

² Commissioner, Connecticut State Dept. of Mental Health, Hartford, Conn.

accomplishments if they can, by drugs, keep hypertension down within certain clinical limits and have not yet told us how to reverse whatever process that it is that causes hypertension. Physicians have even been content, in recent years, to produce symptomatic relief of hypertension by carrying out enormously extensive operations on the sympathetic nervous system. No surgeon I know believes that he can cure all patients with cancer.

Yet, for many of our psychotic patients, within a comparatively short time, an adequate and at least apparent complete reversal to normality can be obtained. I think we must concentrate more of our efforts, therefore, on these problems of the acute psychosis at a time when it has still all the likelihood of reversibility and before any of our iatrogenic operations force it into the mode of "chronicity."

Our typical public mental hospitals are over large, their social standards are artificial and total, they are isolated, they perpetuate ostracism of patients and personnel. I submit that we need to get our hospitals back to the communities from which the patients derive. A hospital built in the community would be more like a general hospital in the attitude of the community toward it. It seems to me we must begin to recognize that hospitalization for mental illness is only part of the total range of services which we can offer to our patients. In the average physical illness a patient sees his family physician in his office or if he is too ill to get out of bed, the family physician comes to his home. Treatment is started ordinarily either at home or in office visits. Early diagnostic and laboratory tests are carried out on this basis. It is only when the tests become too complex or when the illness of the patient becomes too severe that hospitalization is made use of. And clearly, in this instance, hospitalization is for as brief a period as is necessary to accomplish the elimination of the specific factors which required it; and not for definitive treatment of the disease. As soon as the need for bed care and specialized nursing techniques or the need to carry out special laboratory procedures which can only be done in a hospital is over, the patient is again returned to his home and the treat-

ment is continued at home or in the doctor's office on the basis of the information gained during the brief hospitalization.

I submit that we must begin to treat our mentally ill patients in the same way. Because the State has for so long a time accepted the responsibility for the care of the mentally ill, it is probable that most such patients will be treated in outpatient departments of state hospitals rather than in private psychiatrists' offices. Then, too, as we all know, there are an insufficient number of private psychiatrists for the need. However, whether in an outpatient department of a state hospital or under the care of a private psychiatrist, the situation should obtain that treatment can be started and diagnosis established insofar as possible without hospitalization until such time as a brief hospitalization becomes necessary. This hospitalization should be merely an incident in the overall care of the patient, and should be available to the patient whether the physician carrying out the outpatient treatment is a state employee or a private psychiatrist. On release from a hospital the patient should go back, either to the outpatient department or to his private physician or psychiatrist.

Because of the nature of psychiatric treatment with its need to manipulate the patient's total activities rather than just to see him briefly to prescribe a pill or even for a somewhat longer period for a session of intensive psychotherapy, the logical development for the mental hospital after the outpatient department is the day care center. Only when a patient is unable to be handled on an outpatient level plus a day care level, should 24 hour hospitalization be sought.

All of these things can take place much more effectively if isolation of the patient can be avoided and he can be treated in the community in which he lives. Day care becomes easier if the patient does not need to be transported 14 to 40 miles from his home to the hospital every morning and then brought back every night. Families can visit patients when they are hospitalized in a community-based hospital, clergymen can keep track of their flocks, local family doctors can follow their psychiatrically ill patients just as they follow their medically

or surgically ill patients who are admitted to a hospital. One of the not inconsiderable joys I think of this technique might well be that a family would find it harder to change the family constellation and close up the space left by the hospitalization of one member of it if that hospitalization occurred in the community and the family was visiting frequently. We are all aware of how often the remaining family closes ranks after a patient is hospitalized at a distant place in a state hospital; and even when he is ready for discharge there is no longer any place for him in the family constellation. I need not remind this audience that in a recent survey it appears that 40%, at least, of patients who have been hospitalized in state hospitals two years or longer never have a visit from a member of the family.

A community-based hospital of the type I think of would have certain other advantages. Most American communities have now developed a whole series of resources in the way of social agencies that could be brought to bear upon the problems of patients in a community-based mental hospital. Family agencies, recreational agencies, agencies to deal with the elderly, agencies to deal with the problems of old age assistance and of dependent children, all of them are available in our communities and should and could be made use of. Furthermore, such a community-based hospital could and should be built contiguous to the general hospital that serves the local community. As psychiatrists, we have wasted altogether too much of our highly-specialized psychiatric time in dealing with non-psychiatric problems, the handling of which actually many of our colleagues are far better fitted for than we. I see no reason why we should operate in our hospitals laboratories and X-ray departments and operating rooms if we can build our hospitals across the street from the general hospitals which do this part of the medical job much better than we do.

I am convinced that a community-based hospital of the type I have described could, in 75-100 beds, take care of the same case load as a 300-bed building on the grounds of a distant state hospital. I believe that with this kind of a plan we would begin to

meet our obligation and our responsibility to prevent the development of chronicity in acutely ill psychiatric patients and we would offer the full range of psychiatric knowledge to the community at a place where it could be most useful to the members of the community.

Yet I spoke above of the 600,000 patients now in our hospitals. While we must begin to think of the next 600,000 we should by no means ignore our responsibility to the 600,000 we already have. The level of care of these patients must not be permitted to deteriorate. If we separate the community-based hospital from the large existing state hospital, we will merely be accentuating the isolation in which the large hospital already lives, will cut down the interest of staff who work in such a hospital and, in fact, even their willingness to accept employment in such a place and will, in the long run, be neglecting one part of our job in order to concentrate on the other. It is proposed, therefore, that the community-based hospital I have been describing should be established, not as a separate and autonomous institution, but as a "branch" of the parent state hospital. I would imagine that most states have a situation similar to ours in Connecticut. Perhaps not, but at least analogous. Connecticut has a population of two and one-half million people. We have 9,000 patients in residence in our State hospitals at any given day and over 4,600 admissions per year, with a comparable number of releases. It is true that Connecticut is an urbanized and industrialized state, but in any case, for Connecticut the statistics are as follows: 75% of all admissions to our 3 large state hospitals come from ten urban groups of population 25,000 and over and the surrounding feeder communities to these groups. Forty-five percent of all admissions to our hospitals come from the four largest of these groups.

I believe that by establishing a branch hospital, at least in each of the four largest urban communities of the state, we will be able to deal with about 45% of the admissions to our hospitals at the community level. At the same time, for the more rural communities, there would continue to be direct admission to the parent hospital which would thereby be encouraged if not

required, to continue to operate acute intensive treatment and receiving services for those patients who did not go to the branch hospital. The fact that the branch hospital was under the administrative control of the superintendent of the parent hospital would mean, it appears to me, that the level of treatment at the acute phase would continue to be high in the parent hospital as well as in the branch and that there might be for training and other purposes as well as for research, a free interchange of personnel between the two institutions. It would further mean that the transfer of patients from one institution to the other or back again would be facilitated. It would seem to me that this is the only way in which we can avoid destroying our large hospitals at the same time as we develop newer techniques for the acute psychotic and his treatment in his own community. It seems to me that the inherent logic of this situation and modern psychiatric treatment theory lead inevitably and naturally to this kind of development.

The existence in the Connecticut state hospital system of a building over 70 years old, obsolete and dilapidated, and needing to be replaced, has given us the opportunity to try to put this concept into practice. After considerable discussion, the Board of Mental Health and I have recommended

and have introduced a bill into the Legislature to that effect: that this hospital building, housing 300 patients, be torn down and replaced, not on the grounds of the parent institution but by a branch hospital of 75-100 beds with necessary out-patient, day care and night care services physically located in one of the urban communities served by the parent hospital and contiguous to a general hospital in that community. I do not of course know if we will obtain the money for this purpose in this session of the Legislature. But we are committed as a Department to this policy and have the agreement to this commitment of various State officials so that it seems to me only a matter of time before we can try this concept out, at least on a pilot basis.

We would hope that this branch hospital would be in one of the four largest urban communities I spoke of. For a second one of them, we have proposed, though it has not gone so far as the first proposal, that we establish in the community as a branch of the parent hospital a fairly extensive out-patient service supported by day care services, but without any beds at all. With the approval of our General Assembly and our Governor, we hope in a comparatively short time to be able to report to you whether our concept and movement in this direction is sound or not.

THE STATE MENTAL HOSPITAL IN TRANSITION¹

FRANK F. TALLMAN, M.D.²

One-hundred and twenty-two years ago Dr. William M. Awl, one of the founders of the American Psychiatric Association, included in the first annual report of the Ohio Hospital for the Insane the following:

The importance of remedial means in the first stages of insanity, can not be too strongly impressed upon the public mind. That morbid excitement in the brain which accompanies the disease by long continuance, too often induces a change of structure incompatible with the future soundness of intellect, and renders the resources of medical science of little avail, except as palliatives.

These facts are entitled to consideration, as indicating the proper course for arresting individual suffering. They are important also, in a pecuniary point of view. The sooner patients can be cured and discharged, the less expense to both friends and the public.

The search for "remedial means in the first stages of insanity" is still not over, and although we have knowledge that was not available to Dr. Awl, there is still much to learn. State mental hospitals are today, as they were then, concerned about their development. Transition is uncontrovertably taking place, but for some the direction is unclear and the destination is in question. There are those who may think that the proper future for the state hospital lies in its summary extinction. There are others who believe that the destination of transition should be a hospital that satisfies the medical and psychiatric needs of all its patients. It would appear that the proponents of the latter point of view have been active in guiding and helping the state hospitals toward their chosen goal. Adherents of the former theory have not provided convincing blueprints for action in the immediate present that appear any surer of success than those now being followed. Strong leadership has come from our own Society, from the National Institute of Mental

Health and from various public and private organizations concerned with the problem presented by the mentally ill. Certainly no organization has made it evident that they thought the plan of choice was to liquidate the hospitals or turn them over to some non-medical group. The position that this paper takes is in agreement with those who believe that the state hospital is becoming and will increasingly become a place where hospital psychiatry of a professionally high standard will be practiced and that their disappearance will be through their own evolution not dissolution.

The following material cites some of the evidence in support of this hypothesis and is, in the main, a topical account of progress during the last decade. The figures and facts show great improvement; that there is still a long way to go is uncontrovertible, but one must not forget that nothing succeeds like success, and one improvement inevitably leads to a further advance. Growth in program is a healthy infection that spreads at an irregular pace—but it spreads.

Certainly in these 10 years, state hospitals have demonstrated their growth and vitality through significant gains in a number of categories, but perhaps their greatest demonstration of growth is in the remarkable change of attitude that these years have seen. The hospitals now have renewed hope and enthusiasm. Those who have attended the mental hospital institutes must be aware that there is a very different attitude expressed by the membership now than at the first one, and there is no reason to believe that this progressive and courageous feeling will not strengthen and grow.

Increase in hospital personnel has been considerable. When the figures in Tables 1 and 2 are translated into staff per patient ratio they add another dimension to our perspective.

The figures are indeed encouraging, although they are obviously far short of APA minimum standards.

Annual expenditure per patient in 1948

¹ Read at the 115th annual meeting of the American Psychiatric Association, Philadelphia, Pa., April 27-May 1, 1959.

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TABLE 1
PERSONNEL EMPLOYED FULL-TIME IN STATE MENTAL HOSPITALS

	1948	1957	% increase
Physician	2,135	3,759	76
Psychologist	213	805	277
Social worker	676	1,442	113
Graduate nurse	3,961	7,562	90
Other nurse and attendant	48,941	87,984	71
All full-time employees	88,890	160,693	80
All other professions	886	2,313	106

TABLE 2
STAFF-PATIENT RATIO IN STATE MENTAL HOSPITALS

	1948	1957	% improvement	APA Minimum Standards
Physician	1: 258.8	1: 161.4	37.6	1: 30
Psychologist	1: 2,157.0	1: 673.3	68.8	1: 100
Social worker	1: 679.6	1: 375.9	44.6	1: 80
Graduate nurse	1: 116.0	1: 71.7	38.1	1: 5
Other nurse and attendant	1: 9.4	1: 6.2	34.0	1: 4
All full-time employees	1: 5.2	1: 3.4	34.6	
All other professions	1: 518.5	1: 234.3	54.8	1: 40

was 1.81 and in 1957 was 3.65 which is an increase of 101.7. Total expenditure for the operation and maintenance of public hospitals for the mentally ill in 1948 cost \$316,118,370 and in 1957, \$732,180,096, which is an increase of 131.6%.

Some of this increase in expenditure is accounted for by inflation and the 13% that the average resident hospital population increased during the same time, but public expenditure has risen in significant excess of the amounts necessary to cover these two factors. These statistics are introduced to illustrate an operational trend and do not pretend to be inclusive. Legislatures in the main are assuming more adequately their clear responsibility in this matter somewhat better than their psychoanalytic and psychiatric counterparts. Very commonly hospitals cannot spend the money provided them for doctors, and it is therefore difficult to expect the laity to continue to be more effectively concerned about the solution of a medical problem than the specialty itself.

At the beginning of this decade the use of insulin as a therapeutic tool was rapidly decreasing, largely because of the advent

of the less expensive electroshock therapy. Then psychosurgery became a frequently used treatment method, but the irreversibility of the treatment hastened the natural process of evaluation and discrimination. Recently chemical tranquilizers have come into general use, and the early utopian optimism of their exponents is already giving way to a more cautious attitude. Until we have more facts about the causes of mental illness we can expect palliative measures to be overemphasized, overused and overvalued, but with each new method tried, knowledge has increased. It is noteworthy that few of the methods cited have been completely abandoned. However, it is only human to think magically and impulsively in terms of a panacea that will solve all our patients' problems and our own. The immense volume of research literature attests to the investigatory stimulation provided by each new treatment method that appears in our armamentarium. Optimism is an essential ingredient of progress and so is excited enthusiasm.

Examples of the multiplicity of the newer treatment methods in use include group therapy, milieu therapy and the therapeutic

community techniques that are now part of the therapeutic fabric of many state hospitals.

Another encouraging evidence of clinical growth is the rapidly expanding use of open wards and open hospitals. Movement towards the latter is not as rapid as modern psychiatry would dictate, but the trend is evident. Obviously, physical restraint in the form of locks and jackets has not completely disappeared, but in the last 10 years there has been an encouraging decrease in their uses in the treatment of the mentally ill. The establishment of day and night hospitals, a logical outgrowth from the older but expanding OPD programs is clear evidence that those who are responsible for the treatment of the mentally ill have become more secure and thus more courageous in psychiatric practice than they were a decade ago. It would seem that these facilities should make it possible to bring the rural hospital into urban centers at a minimal capital and operational cost. There seems to be no valid reason why a rural state hospital could not extend its services in this manner and thus avail itself of professionals who could not take the time and effort needed to travel to the rural community. One of the great advantages of day and night hospitals lies in the fact that patients being treated in these facilities do not have their defenses completely shattered by total removal from their families and from their ordinary social and community relationships. Total dependency is one of the reasons why institutionalized patients so quickly develop a serious and disintegrating disease in addition to their original illness. There is as yet not an accepted name for this illness, but with some accuracy it might be called "hospitalosis."

The attitude of state hospital systems towards research has shown a remarkable change in recent years. States are not only providing money for research but are appointing research directors at high administrative levels. Examples of this are New York, Ohio and California. Research programming is still in its infancy, but the significant fact is that the infant is lusty and growing. The following table of grants awarded by the National Institute of Mental Health to state mental hospitals illus-

trates this fact which, by the way, is particularly evident in the year 1958 and the last figure which represents three months of 1959:

TABLE 3
RESEARCH GRANT SUPPORT IN
STATE MENTAL HOSPITALS

Fiscal Year	Number	Amount
1948	1	7,000
1949	1	7,000
1950	2	14,740
1951	5	31,475
1952	6	75,830
1953	6	68,975
1954	8	123,220
1955	8	119,194
1956	8	117,751
1957	20	515,977
1958	49	1,152,470
1959 to date	53	1,529,089
	177	3,762,530

When a legislature, burdened with the need to provide very large amounts for state hospital maintenance and operation provides money for research, one can safely assume that the hospitals in that state will increasingly become centers for science and treatment, thereby attracting and keeping personnel.

The mutually indispensable cooperation between universities and state hospital systems is increasing. The fact that the university is beginning to see the state hospital as a great human laboratory and that the state hospital is viewing the university as a source from which it can expect practical help in its efforts to become professionally adequate is perhaps the most important single sign that the tempo of progress is quickening.

The National Institute of Mental Health reports the following figures covering training grants provided state mental hospitals for the years 1948 through three months of 1959. The monies allotted are increasing, particularly in 1958. If awards continue at the rate reported for the three months of 1959 it will be an obvious leap forward in this all-important activity.

In the area of training there are two related activities that are particularly encouraging. Inservice training is replacing the old learning on the job method which operated on the supposition that an em-

TABLE 4
TRAINING GRANT SUPPORT IN
STATE MENTAL HOSPITALS

Fiscal Year	Number	Amount
1948	1	10,160
1949	2	14,792
1950	6	43,281
1951	6	53,841
1952	9	69,600
1953	5	49,832
1954	7	46,930
1955	5	56,956
1956	6	60,481
1957	8	90,382
1958	7	116,771
1959 to date	13	207,610
	<hr/> 75	<hr/> 820,636

ployee would be proficient if he learned what his preceptor knew by the time this worthy functionary was ready to retire. Organized inservice training for psychiatric technicians is a case in point. Curriculum content is now a far cry from old "Here is your rule book and keys—the charge will tell you anything you need to know." Physicians, too, are getting more instruction within the institution, at university centers and in increasing number through attendance at conferences and institutes. The Mental Hospital Institutes have attracted an increasingly large attendance and offer a varied and comprehensive program. The first one in 1949 was attended by 190 participants; the last one in 1958 by 475, which is probably as many from an educational point of view as can be profitably handled at a single institute.

Acceptable residency training programs were, until recent years, a rarity within our state hospital systems. This is not now the case because each year finds more hospitals whose organization, staffing and program warrant approval as residency training centers. Grateful recognition is due the Central Inspection Board and the Committee on Standards and Policies of Hospitals and Clinics for their increasing efforts in this area. Good teaching is admittedly expensive to the institution, but it produces incalculable dividends for the patient because no institution can be a teaching center without benefiting from the benign influence of eager minds in search of answers and older ones trying to find them. It is true that far too few psychiatric residents stay in hospi-

tal practice when their training is complete. Men go into private practice, or so they say, in order to make up for the enormous expense of having become specialists and to rapidly expand their standard of living. This obvious reason is open to question. A thorough study of the problem may well reveal that one important cause of attrition has to do with the cultural milieu within the hospital world. Stanton and Schwartz and later Belnap have provided us with excellent beginnings for future study and action. If the residents were emotionally convinced that a staff position within the hospital in which they are being trained would continue to be as intellectually and professionally rewarding as their residency program, far fewer would leave. Hospitals should see to it that the whole organization becomes an integral part of training programs so that this unwholesome dichotomy that the resident with some justice fears does not occur. Perhaps also, the resident is afraid he will become infected by the nihilistic attitudes of staff members who have ceased to progress partly because their most productive years were spent when progress was almost non-existent. When a hospital offers a service unleavened by progressive change and lives in a virtual microcosm, science and indeed the world passes by almost unnoticed. Scientific articles that are read seem to be written for everyone but the reader, and individuals begin to parrot phrases like "yes, but." Happily this attitude is rapidly becoming less evident and more frequently challenged within the microcosmic structure itself. The courageous leadership that welcomed the sociological studies mentioned will undoubtedly give courage to others so that they too will become able to take a close, searching look at themselves and their social structures in the expectation that the result will be reduction in the worrisome process of attrition.

It is important to cite certain activities that have grown out of administration's need to find better ways of dealing with large patient populations. Some hospitals are now being reorganized in an effort to cope with the isolation of patients caused by a combination of size and administrative centralization. The technique used is to

creed within the large hospital a number of much smaller units, each one charged with the responsibility of operating so far as the patient is concerned, as though it were a small hospital. This fresh approach indicates that the experimenters know that it is not possible to make an institution into a treatment hospital using the same administrative structure that existed when it was merely an agency for human caretaking. Administrative workshops, staff conferences and the like are tending to become much more patient centered and in consequence there is a growing awareness that no human being is too sick to improve. This is one reason why back wards are moving forward, and the attendant's key ring is a less distasteful symbol than it used to be. It was not long ago that a psychiatric administrator felt justified in setting his psychiatric knowledge aside when he was faced with what he termed a practical problem. This dissociation is becoming less and less possible, not only because of the growth reviewed here but because of public opinion. We are educating the public, and we now find ourselves in the position of having to act within the framework of the educational material which we taught. We cannot preach the need of a good program and at the same time complacently and rigidly refuse to do our utmost to improve what we have. There is no hospital that cannot be improved if its leadership decides to try. Often a courageous "try" will spark further enrichment of the program through increased legislative support.

There is a rapidly growing awareness of the therapeutic effect of good architecture, not only in terms of walls and their arrangement but in terms of color and furnishings. The old, horrible colors and worse pictures that until recent years were the accepted environment for patients are giving way to emotionally satisfying architectural design and to a decor that provides a lively and pleasing environment that looks alive and vigorous. Ten years ago most wards were furnished by the old, hard, uncomfortable, wooden benches and chairs. These were the trademark of the old mental hospital, but happily they are being replaced with modern furnishings. The layman sometimes asks if this matter of architecture and color

and furnishing is important to the health of the mentally ill patient, and indeed he has heard the fear expressed that comfort will only serve to complicate the dependency problem presented by the sick person. This is the kind of thinking that if followed logically, would claim that the way to cure a mentally ill person well was to chastise him by prescription.

Since hospitals and communities are becoming less and less frightened of each other, volunteer services have increased to the mutual benefit of both. A volunteer program is a valuable adjunct if it is well managed and if there is reasonable selection of volunteers who participate in a satisfactory training experience. Not only do such programs help patients directly, but they help the institutional culture in its attempt to approach as nearly as possible that found in the world of reality.

Much of the growth that has been commented upon could not have occurred without the intervention of state and federal legislative bodies. Almost everywhere legislatures know that patients do not enter mental hospitals to be kept there for the rest of their lives but come for treatment and discharge. Consequently, the taxpayer, as represented by his legislature, is becoming increasingly willing to provide funds for a treatment program planned in the light of present-day psychiatric knowledge. Once in a while this eagerness and concern of the public may demonstrate itself in ways that some may feel are premature. In other words, public expectation can become greater than present knowledge or personnel can satisfy. Sometimes too a legislature will provide money for specific research purposes that the institution or the organization is not prepared to profitably utilize. This embarrassment is really one of riches to which the response must be an increase of intelligent pre-planning and an improved foresight. It is disconcerting when laymen suggest by such action that we are not doing what our public education implied that we would do if we got money.

State legislation which establishes a firm basis for the establishment of mental hygiene facilities as a joint enterprise between state and local authorities is a particularly noteworthy movement that is sure to grow.

The new focus for expansion of service requires both economic participation and program content and operation. There is, however, a danger inherent in this advance: it would indeed be a serious matter if there were too great a time lag between the passage of such legislation and our ability to properly staff the resultant facilities. A long time lag obviously reduces the community's enthusiastic readiness for mental health progress, but psychiatric staff positions filled either by the partially trained or by substituting personnel from the ancillary disciplines would in the end be a serious mistake. Perhaps the remedy lies in making more use of the doctors in the private practice of psychiatry and psychoanalysis who are more and more showing evidence of their willingness to leave their own consulting room for part-time service in clinics, hospitals and medical schools. Administrators probably do not realize the number of man hours they could acquire if they gave the private practitioner an opportunity for part-time service. It would be sad indeed if those responsible for public mental health programs fail to take advantage of the private practitioners' growing eagerness to satisfy the demands of his superego and the pressure to free himself from the claustrophobic isolation of his office walls.

Historically there has been considerable difficulty in getting medical schools interested in program advancement in state mental hospitals. This was one of the reasons why several state systems developed their own neuropsychiatric institutes in conjunction with universities. It was expected that the institutes would provide stimulation for research and training to both the hospital system and the university. Co-operative ventures in these areas are a most hopeful sign of our psychiatric times. Nothing but good can come from this symbiosis, but here again every possible effort must be made to actively involve the hospitals so that we avoid creating within the state systems small islands of creative progress that are isolated from all the rest. Only a few years ago the idea that there should be directors of research and directors of professional training on the staffs of hospitals and also at the highest administrative level within the department itself was merely a

dream. There are several states where it is one form or another that pattern is an existing reality.

State hospitals are moving toward a much more satisfactory level of service operation. It is true that in Texas it was hospitals the best possible psychiatric service being practiced, but it is equally true that a great advance has been made in the last decade. The old traditional institution is due to a large extent born of ignorance concerning cause and cure of psychiatric disease, but improved psychiatric knowledge is gradually bringing about a new enthusiasm and a new hope. However it is easier and for some, more acceptable to think of closing down the facilities presently available and starting all over again than it is to continue what appears to be the more difficult course of bringing to fruition the kind of program that we know is technically possible within the framework of existing structure. It is unlikely that more large institutions will be constructed, and it can be expected that day and night hospitals, OPD clinics and small psychiatric units in general hospitals will ultimately replace the state hospital as we know it today. However, the basic impetus for movement in this direction stems from the state hospitals themselves. It would be foolish to kill the goose that lays such fertile eggs as those just presented for consideration. Look what has been hatched in these ten years! We must not forget that if the state mental hospitals are to ultimately disappear it will be because the hospitals themselves demonstrate by experiment and example many of the techniques that will ultimately bring about their dissolution.

This discussion would not be necessary if the APA staffing patterns for psychiatrists had been achieved. This is indeed a critical problem but we can look for significant improvement because the process and content of transition is rapidly preparing the setting necessary to attract an increasing flow of full and part-time men into hospital service.

Turning again to Dr. Aul and to 125 years ago, it is noteworthy that his Board of Trustees made a memorable statement when they voted to build his hospital:

The insane are no longer treated as the outcasts of society, or considered as unworthy of brother regard; they are to be confined in common jails or poorhouses. Their diseases are found to be curable like other disorders of the human system. Through the influence of mild and gentle means, without violence in any instance, they readily submit to the requisite treatment, and not infrequently in short periods of time their minds become tranquil, alienation ceases, and reason is restored.

Psychiatric wisdom has not yet been able to fulfill the Board's vision, but we have come a long way and the pace is quickening.

DISCUSSION

JAMES J. TYHURST, M.D. (Vancouver, B. C.). There appears to have been a major shift in orientation of psychiatric care in mental hospitals. What form should the inpatient services of the future take? Briefly, these trends would suggest first, that the inpatient services be seen as an aspect of community mental health services rather than vice versa; second, that the services be in centers of population and integrated with other medical services; third, that the services provide treatment close to the patient's place of residence on a regional basis; fourth, that the hospitals be of a small size, so as to maximize the opportunities for the development of the therapeutic community and for adequate therapeutic administrative activities.

Generally speaking, it would seem that this description applies most readily to the psychiatric unit of the general hospital, which fulfills most of the requirements for the regionally located psychiatric inpatient services.

As far as the mental hospital is concerned where it fulfills the above criteria of small size, appropriate regional placement, and relation to medical facilities, it could well serve as the basis or as an essential ingredient in a community program. Otherwise their use might be in several directions: first, they might provide the domiciliary care units of the future; second, they may themselves be converted into general hospital units or for units for long-term active care.

The disadvantage of most of our mental hospitals on this continent should be clearly recognized—

1. Size, structure and organization are unsuitable.
2. They are geographically and socially isolated.
3. They are not integrated with other medical services.
4. They are unable to provide continuity of care.
5. Many of the problems over which the staff spend a great deal of time are pseudo-problems based upon the inadequate physical structure and plant, upon the geographic and other isolation, and by the necessity to treat masses of patients with small numbers of personnel.

THE STRUCTURE AND FUNCTION OF THE PREDOMINATING SYMPTOM IN SOME BORDERLINE CASES

LEO H. BARTEMEIER, M.D.²

The patients to be discussed have been in treatment with several psychiatrists and psychoanalysts for several years without any appreciable improvement. The mental illnesses from which they suffer are characterized by a persistent physical symptom which is accompanied by anxiety. It is also characteristic of these patients that they feel desperate, are fearful of losing control over themselves and complain that they are hopelessly ill. Although they are also subject to insomnia, headaches, and other symptoms their attention is constantly focused on a central symptom and all else in their lives is of far less importance. It is as though they regard it as highly dangerous and that they have to keep watching it so that it might not overwhelm them. It is this steady resistance that showed the necessity of joining with them for the purpose of learning what one could about the structure and function of their predominating symptom. Their failure to be benefited by psychotherapy suggests the likelihood that any severe threat to the continuation of their predominant symptom might necessitate their becoming more openly psychotic. The following case reports may be useful in clarifying the title of this paper.

Case 1.—A 25-year-old married woman who was referred for treatment because of an impairment in her vision which had its onset several days after she had given birth to her second son. Everything in her environment appeared shadowy and as though she were looking through a screen. Her eyes felt strained and her inability to see objects clearly caused her to feel hopeless, depressed and desperate. She cried frequently, spoke of suicide and complained of having lost interest in her husband, her children and her home. She was a rather pretty woman with a child-like facial expression and rather large eyes for which she had often been complimented. She was restless and afraid to be alone. Her husband, who

was 3 years older, was successful in his business, was more educated than his wife and had been reared in a higher social stratum of the community. He appeared to be somewhat detached from his wife, reacted to her stress with very little feeling and carried out his responsibilities to her and their children in a business-like manner. The patient was an only child whose parents were said to have been sexually promiscuous throughout their marriage. Her father, who had died some years previous to the patient's illness, was engaged in an occupation which necessitated his frequent absence from the home. During her adolescence she had often undressed her mother whom she would find intoxicated, sprawled across the bed when she returned home from school. These experiences had seemingly intensified her voyeurism and she often fantasized herself undressing and bathing prostitutes or watching her husband having intercourse with another woman. It was thought that her symptom of seeing objects as in a shadow was related to her intense and persistent voyeurism.

She had often been drawn into social relations by her husband but had never enjoyed them. She was envious of him, had never felt much interest in his work and had often wondered whether she loved him and why she had married. She was sexually frigid and avoided intercourse as often as possible. She cared more for their children, but her marriage and her home afforded her very little satisfaction. Her hostility toward her mother was represented in her dreams as houses on landscapes, frozen and covered with snow in the same shadowy light of her daytime symptom. Her mother, who lived at a great distance from the patient, was hospitalized because of a prolonged depression during the time the patient was in therapy. Instead of having developed a characteristic and obvious puerperal psychosis it would seem that this patient had withdrawn from her environment through her eyes. Simultaneously her symptom discharged her instinctual impulses by diminishing the light of all objects in her environment. The structure of her symptom appeared to correspond with the typical neurotic symptom, but because of an unequal compromise between the instinctual impulse and the defense against it the symptom was accompanied by anxiety.

¹ Read at the 115th annual meeting of the American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

² The Seton Psychiatric Institute, Baltimore, Md.

Case 2—A 58-year-old married woman who was hospitalized on the 1st of April of 1954, stated that her spasms which were persistent and severe. This symptom had been present for many months and had been persistent in its development. She had been unable to do her house work and had learned to rely through the intensive psychotherapy she had previously received. This patient was critical and sarcastic with the nurses and expressed her dissatisfaction with whatever they attempted to do in her behalf.

Her muscular spasms and the associated generalized muscular tension were constant throughout her waking life and her symptom became more intense and painful during psychiatric interviews. This aggravation of her suffering occurred during every visit with any physician on the hospital staff. When she left the hospital after a year, her symptom was as severe as it had been on admission.

This patient was the mother of 6 children and the wife of a man who had suffered a mental illness in connection with his military service. Two of the children had schizophrenic illnesses. The patient was raised in an isolated environment in a family having a meager financial income. She was in the care of a physician during the time she had been engaged to be married because of severe insomnia. Some years prior to the onset of her muscular spasms and tension her husband had taken his leave of her by establishing an apartment for himself in the large home which the family occupied. It was finally learned that he had promised the patient that he would never reveal to any one that she had suffered an acute mental illness for which she had been hospitalized many years previously.

It is well known that when cortisone was administered to patients suffering from rheumatoid arthritis, some of them were relieved of their arthritis, but developed schizophrenic illnesses which required hospitalization. After they had recovered from these psychoses their rheumatoid arthritis recurred.

If it had been possible to relieve this patient of her muscular spasms and her painful muscular tension she would have probably experienced a recurrence of her previous psychosis. The structure of her symptom appears to have been similar to the symptoms of rheumatoid arthritis and at the point in time that she was seen a diagnosis of a psychosomatic affection would not have been in error. This patient had no

difficulty discharging her hostile feelings toward other women. With men, however, she portrayed an attitude of suffering and her hostile feelings were intensified during every interview with the hospital physicians, all of whom were men.

Case 3—A 28-year-old single man who wondered whether hypnosis would relieve him of his intestinal spasms and re-establish his control over his flatulence. He had been in treatment with 5 different psychiatrists for almost 5 years. He said that his case had been bungled and that his whole life had been wrecked. He was tall and asthenic in appearance and was restless and apprehensive during the interviews.

Because he had lost control of his flatus he had been unable to work for 3 years and had remained at home with his parents and his younger sister. She had developed a schizophrenic illness one year prior to the onset of his intestinal symptom. He had taken her to a psychiatrist for several appointments. During hospitalization she recovered sufficiently to return home. He worried about her continuing disability. His father had retired from his restaurant business and had died after injuries received during a fall several months previously.

After graduating from high school this patient held several short time jobs and then held a longer position as a draftsman until he enlisted in the Army. His 3 years of military service included 6 months duty overseas and following his discharge he returned to his former position as a draftsman. One week after he began studying engineering after working hours he became incapacitated because of losing control of his flatus.

The psychological evaluation showed him to be an extremely autistic individual who was almost constantly preoccupied with hostile destructive impulses. He appeared able to maintain some semblance of control through emotional and social withdrawal. The psychologist also expressed the opinion that his symptom enabled him to make a borderline adjustment. Both the psychiatrist and the psychologist regarded this patient as suffering from a latent or incipient schizophrenia.

This patient's predominant symptom appears to have served a function of a different order than the principal symptom of the 2 previous patients. His excessive flatulence afforded a frequent discharge of his hostile destructive impulses. It would seem that through this symptom and the

and withdrawal it necessitated his schizophrenic psychosis was maintained at a level of low intensity. The predominating symptom in this patient was, therefore, regarded as a defensive device which protected him from a more severe psychotic development. This was the probable reason why intensive psychotherapy with this patient had been so unsuccessful.

The symptom of the first patient, which was characterized by seeing all objects in a shadowy light, was also observed in another young mother who awakened in terror from a dream in which she was helpless to prevent the drowning of her daughter. On awakening, her surroundings were in a dense fog. When she discovered that this alteration of the atmosphere was due to something within herself she felt strange and remained in a state of detachment for several days. She said "everything seems unreal and I feel removed and at a distance." This acute disturbance was identical with the way she had felt during the onset of her previous schizophrenic psychosis. She was most fearful she would again become psychotic because of the anxiety aroused by her symptom but this repetition in miniature of her psychosis was only transitory. The gratification of her murderous impulse in her dream without distortion by the dream work was characteristic of the predominating symptom in these patients. The feeling of helplessness

which this patient experienced in her dream became detached from the dream. Having witnessed her daughter's drowning was a visual experience which she became disguised after she awakened. What she had seen in her dream was hidden from view by the fog she saw upon awakening. When this transitory delusion could not be maintained the helplessness she had experienced in her dream was changed into the feeling of being removed and at a distance from her destructive impulse. The persistence of her dream in her waking life provoked her anxiety and the predominating symptom was a transitory psychosis.

SUMMARY AND CONCLUSION

The predominating symptoms of the patients I have been describing have been accompanied by anxiety and they have served the function of protecting them from further developments of their psychoses. These are the patients whom a descriptive psychiatrist might classify as borderline because they have neither delusions nor hallucinations and are, therefore, not regarded as legally committable. They are unlike the ambulatory schizophrenias described by Gregory Zilboorg, but they are representative of patients who suffer from the same group of illnesses, i.e. schizophrenias which are modified by a predominant symptom that is associated with anxiety.

THE PSYCHIATRIST AND THE RELEASE OF PATIENT INFORMATION

MARC H. HOLLENDER, M.D.¹

In recent years, increasing attention has been focused on the social matrix or groundwork of psychiatric practice, especially as concerns the hospitalized patient. In this connection it is important to examine the relationship of the hospital psychiatrist and the agencies or organizations requesting information and/or recommendations concerning patients or former patients.

Although there is a paucity of literature on this subject, it would seem that the requests for information usually are considered in terms of what data should be imparted and what should not. The following question then arises: Whose agent is the hospital psychiatrist? Is he the agent of the patient, the hospital, the community, the government? This issue has been discussed in detail elsewhere(1). It should be noted, however, that only in private office practice can the psychiatrist be exclusively the agent of the patient. In hospital practice, and especially when the patient has been deprived of his freedom (as in commitment), some of his rights are taken over by others(2). In these circumstances the psychiatrist must represent the state, the hospital, or the relatives, as well as the patient. The effort to protect the patient and to represent him as much as possible has led some institutions to stamp all released data: "Not to be used against the patient's interests." Other institutions attempt to be impartial, while a few assume the role of the agent of the organization requesting information.

Debates as to what information should be imparted or whose agent the psychiatrist should be, serve to obscure an issue of more far-reaching consequence. Instead of asking what should be said, it is reasonable to ask first if anything should be said. The following question might also be posed: Is the hospital psychiatrist oriented to therapy or

to public service or does he believe that he can encompass both objectives?

To discuss this issue, we must consider the effect of imparting information on the practice of psychiatry. What happens if the psychiatrist provides a public service as a fact-gathering and information-dispensing agency? This, and a number of related questions, will be considered.

TYPES OF REQUESTS

The day after a major fire occurred in the community, the police called requesting information concerning a man employed by the company which had sustained the damage. Because it had been learned that he had been a patient at the hospital, the police wondered if he was a "pyromaniac."

A dean requested information concerning a former patient who had applied for admission to college. Would we provide a diagnosis and recommendations? A similar request was received from a school of nursing.

The following note was received from a member of the Reporting Department of a nationally known credit-rating organization. "Please send proper forms to Mr. K., regarding his giving clearance to (name of company), only and no other parties, to investigate treatment and final disposition of his case."

A letter concerning another former patient stated: "Mr. P (date of birth), has made application with this hospital as a laborer (custodial) . . . We would like to have a summary of his medical and psychiatric condition. You are assured that any information furnished will be held in the strictest confidence."

The Federal Bureau of Investigation requested information concerning a man, reputedly formerly a patient, who had applied for a position in a government agency. Information was also sought in connection with an application for a permit to possess a firearm and in connection with the processing of an application to adopt a child.

Of the numerous requests made by insurance companies, two have been selected as examples. A member of the Claim Department wrote: "We understand that Mr. M has been confined to your hospital . . . May we please have a statement verifying the period

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confinement, and including his condition, prognosis, and any pertinent comments that you might like to give us that might help us better evaluate the degree of Mr. M's liability. We would also appreciate a copy of your data and case history . . . Also, because of the type of Mr. M's illness, we wonder if you would consider him competent to endorse checks and direct the use of the proceeds thereof with a clear understanding of the nature of his acts."

The Medical Director of an insurance company wrote: "Your patient has signed the enclosed authorization. Will you please advise us of the details of consultations during the past five years so that we may determine his eligibility for insurance."

SHOULD THE PSYCHIATRIST SUPPLY INFORMATION?

It is apparently assumed that many of the requests placed for reasons of insurability, police or legal action, or acceptability for a position or school are reasonable and should be answered. As previously stated, it may be argued then that the information imparted should be selective and in the interest of the patient. While this may be the expedient course of action, it would seem important to question it in light of long-term and far-reaching consequences.

If information is sent out, will the patient see the psychiatrist as his helper or as a possible informer? To spy—and this may not be an unreasonable term—on a patient, runs counter to our usual psychotherapeutic endeavors which aim at understanding and reeducation. In fact, if the patient regarded the therapist as a potential spy or informer, the relationship and treatment process would be markedly altered. This would be true even if the patient believed that information would be furnished only if he gave his written consent.

The argument might be advanced that the hospital psychiatrist possesses information indispensable to others. In certain instances data obtained during the course of psychotherapy might be of considerable value in legal and other determinations. It should be noted, however, that personal history and private feelings will be discussed only if confidentiality is assured. Even if information were to be released only in the patient's interest, he would be encouraged to make "as good a case as

possible" instead of frankly expressing himself.

Persons in fields other than psychiatry are aware of the damage that might result if the psychiatrist attempts to be both therapist and purveyor of information. Two instances will be cited. In a precedent-establishing case in the State of Illinois, a Circuit Court judge(3) declared:

It is conceivable that the courts in a situation such as is presented here today would say, true, you are engaged in the profession of healing the mentally disturbed, the mal-adjusted members of our society . . . We know that you cannot do it without obtaining the confidence of your patient and getting the information from him. Nevertheless, it is our job to get all the information we can in order to correctly dispose of a case. Therefore, we are going to compel you to disclose those matters which came to you as a result of your confidential relationship and thereby run the risk of such a disservice to society as may rob it of a healing process affecting thousands and perhaps millions of our inhabitants.

My understanding of the law is otherwise. I am persuaded that the courts will guard the secrets which come to the psychiatrist and will not permit him to disclose them. I am persuaded that it is just one of those cases where the privilege ought to be granted and protected. And the social significance of it is probably even greater than that which comes from the protection of the communications between lawyer and client.

In an article entitled, "A Criminologist Looks at Privilege," MacCormick(4) stated:

Giving parole boards access to what is dug up in individual and group therapy would be opening a veritable gold-mine to them. But the shaft of that mine is sealed to them and to institution administrators, and must stay sealed. Prisoners have their eyes always on the day of release and their minds always on what may advance or delay that day. Unless they can be sure that whatever they reveal in therapy will not be reported to the institution administration or the parole board, the effectiveness of psychotherapy will be disastrously impaired and will eventually cease to exist.

The question might now be raised: "Who will provide the information required by schools, employers, insurance companies, credit-rating organizations, etc.? The an-

ower would be that they might hire their own psychiatrist for this purpose. The role of such a psychiatrist then would be clearly defined. He would not obtain data, to be used for decision making purposes, under the guise of helping or treating the patient.

A, in the case of the parole boards, valuable information, possessed by a hospital psychiatrist, might be withheld to protect the effectiveness of psychotherapy.

WHAT HAPPENS WHEN PSYCHIATRIC INFORMATION IS FURNISHED ?

If the principle that information should be imparted were to be accepted, many questions would still have to be answered. The first would be: Is the information furnished really useful? If it is merely to substantiate the facts of hospitalization for insurance purposes, obviously it is. It might also be of value in exceptional circumstances, such as the one cited involving the deliberations of a parole board. It is another matter, however, if it is to be used in determining employability, acceptability for admission to a school or induction into the armed forces. To predict, in such circumstances, requires knowledge of (a) the person's problem or disorder, (b) the nature of the task to be performed and (c) the relationship, if any, between the two.

If the contradictory testimony of so-called experts in legal disputes is recalled, it should be clear that "facts" can be arranged and viewed in different ways and that conclusions based on them vary widely.

In assessing the patient's problem or disorder, it must be borne in mind that there is a profound difference between psychiatric and (other) medical data. While the latter depends in a measure on information imparted by the patient, it can be obtained largely by physical and laboratory examinations. The former, however, is almost entirely dependent on what the patient is willing to reveal. (Certain profound psychotic disorders would be exceptions.) Since speaking of problems has social implications (in contrast to speaking of the body), the patient may be reluctant to reveal certain pertinent data.

For the most part, the needs of a job or school are understood by the psychiatrist only in a general sense. Because information

imparted to the employer or dean of admissions is to determine the capacity of a person to adjust, it would seem essential for the psychiatrist to possess a detailed picture concerning to what the adjustment must be made.

The assumption often is made that psychological problems lower the tolerance to stress. This is based on the concept that a human being can be likened to a machine capable of handling a specified load. Unfortunately, this concept has only a very limited usefulness. Stress must be considered in specific terms because it is well known that what is stress for one person may be lightly regarded by another. Thus, a specific job or a certain college environment may or may not be stressful to a given person. The variables may be so numerous that no one could be certain in advance as to which combination would come to the fore and impinge. Moreover, there are situations in which so-called emotional problems (or patterns) are assets and not liabilities. This led to a seeming contradiction in terms during the war years, when there was the "successful neurotic soldier"(5). In this instance men who had become accustomed to anxiety sometimes seemed to tolerate battle conditions better than some of their fellow soldiers who had never previously experienced much anxiety.

Prediction, in this or similar instances, involves many variables, some known and others unknown, which can be arranged in an exceedingly great number of combinations. Obviously, from the standpoint of prediction there is little similarity between this situation and that of the physicist in a laboratory manipulating a single variable. I(6) have previously compared the psychiatrist's prediction of the emotional reactions of a patient to a surgical operation, to the tout's selection of the winner of a horse race. The most that can reasonably be expected is an "educated" guess. Is this the type of recommendation that we would like to offer in a situation which may profoundly affect a person's future? And if we make a statement, is it clearly labelled as an "educated" guess or is it implicitly or explicitly labelled as a scientific statement?

It could be argued that it is sufficient to supply information which the recipient

might use to draw his own conclusions. First of all, the selection of material, like the slanting of a newspaper article, might influence or even determine the conclusion reached. Secondly—and when there is relatively little slanting—how will the recipient do better at decision making than the psychiatrist would? In a sense, instead of being like a tout, he is like a "hunch-player." Could he not do as well, or even better, if he applied his usual method for selection, uncontaminated by data which he understands poorly?

The practice of supplying a label may be the most misleading of all (7, 8, 9). It is assumed that the label, psychoneurosis, defines a disorder much as diabetes mellitus does. But does it? The argument can be adduced that psychoneurosis is merely a pseudomedical term used to describe problems in living, and that, in fact, it could in this sense be applied to every human being (10). Then where are we?

Even the label schizophrenia, which may or may not refer to a medical disorder (*i.e.*, disease of the brain), does not contain within it reasonable grounds for predicting how capable a person will be to go through college or to perform satisfactorily at a job. To use the term in a letter, however, is to stigmatize the person so labelled. Modifying statements usually are of little avail.

In this connection, the question should be asked: "Do the words I write convey the meaning I intend?" Or, "Are my words employed as calls for action rather than as partial forms of information?" Does a word imply one thing to the psychiatrist and another to an employer or dean of admissions?

One situation recently reported will serve as an example of the difficulty which might arise when information is imparted and recommendations are made. Boverman (11) stated:

About three months after her discharge, and at a time when I was observing that she had improved considerably and was operating effectively, she applied for reinstatement at her last job. As a matter of form, her previous employer requested information from the hospital about her illness and her working capacities. Although knowing she was in therapy, the hospital replied, in a several-page letter, to the effect that it was certain she

could not be entrusted in the future with a job because of her severe illness and impairment of judgment. She, naturally, was unable to be reinstated, but within a few weeks obtained a new job of greater complexity and responsibility and has been doing well in it since.

In this instance, incidentally, the hospital acted as an agent for an employer. Boverman did not question whether any information at all should have been released to her previous employer either by himself or the hospital. His point was that the woman was not rehired because the hospital supplied out of date information instead of consulting with him. This example also illustrates the problem which may arise if information derived during a period of hospitalization is used for predicting future performance.

COMMENT

It can be inferred from the volume and type of questions asked that it is common practice for the psychiatrist to furnish information to various agencies. Notes in the literature, similar to Boverman's (11), would also seem to bear this out. No doubt the way in which these requests are handled varies. In some instances, the practice may be to respond only to physicians. As previously mentioned, some hospital psychiatrists will provide information if it is "for the good of the patient," and then only if a release form has been signed. So-called unreasonable requests (for example, a wife demanding data which might favor her divorce action) are apt to go unanswered, or are answered with a note that no information can be released.

The expectation that requests will be answered and the practice of complying, in part, stems from the general practice of medicine. Too little attention has been paid to the difference in the social significance of data applying to how a person feels, thinks and lives, on the one hand, and to how his body functions, on the other hand.

It may also be that psychiatrists have had too great a need to prove their usefulness as members of society. As possessors of special and secret data (much like the possessor of choice bits of gossip), they can gain recognition, and perhaps even power.

they are willing to share their possessions with others who can use them. In my opinion, they have even been seduced to claim that they have the ability to foretell the future in a way that no one else can. Thus, "fortunes" *quoniam* have been dispensed as though they were "sure things."

It is often argued that information is supplied only because the therapist is asked to assist the patient who needs his help. This clearly reduces the patient to the role of the helpless child. What effect, it must be asked, will this have on therapy?

The practice of being both therapist and "the servant" or informer and/or judge has appeared in the most unexpected places. For example, the psychiatrist to the student health service at a medical school may function as a special advisor to the grades committee, or training analysts in a psychoanalytic institute may submit reports and make recommendations to the educational committee concerning their analysands.

Whether information should be released, and if so, what kind, must be considered in terms of the context of psychiatric practice. It is only in private office practice that a strictly confidential relationship can be maintained with the psychiatrist (or psychoanalyst) serving as exclusively the agent of the patient. In the hospital setting, a one-to-one relationship is impossible. As discussed in another paper(1), the psychiatrist is often the agent of the patient's family or the hospital as well as of the patient. In so far as the patient is unable or unwilling to assume responsibility and to participate in decision-making concerning the treatment he will receive, this must be taken over by others, usually his family. To function in decision-making, the family must be provided with information. It should be noted that decision-making is for the patient and is concerned with the practical aspects of dealing with his disorder. This stands in sharp contrast to making decisions about the patient's ability to work or attend school after he has been discharged from the hospital. In the latter situation, the focus is on the good of an institution (company, school etc.), whereas in the former, it is on the good of the patient. This is not substantially negated by

professions of concern for the patient's future.

It would seem that the hospital psychiatrist will have to decide whether his function is oriented to treatment or to public service. Moreover, the decision reached should be made explicit. To encompass both roles would be possible only if psychosocial problems and psychiatric disorders were regarded as physical illnesses and treated exclusively with medications and physical therapies (electroshock, lobotomy etc.). Psychotherapy, dealing as it does with man's psychological and social life, would be seriously incapacitated if private (or semi private) information were made available for public service purposes. Eventually, it would become generally known that what a person related concerning himself might be used against him. Or, even if it would only be used "in his best interest," he might be circumspect so that as good a case as possible could be presented in his defense.

Those persons, referred by the courts, for examination for the purpose of determining their "sanity" obviously should not be housed in a hospital. In this instance the institution provides a public service and not a treatment function. It might be likened to a jail in which persons are detained while psychiatrists examine them for the purpose of society.

SUMMARY

In this article the relationship of the hospital psychiatrist and the agencies requesting information and/or recommendations concerning patients has been examined. Two questions immediately arose: 1. Whose agent is the psychiatrist? and 2. Is he oriented to therapy or to public service or does he believe that he can encompass both objectives?

The types of requests for information and recommendations were enumerated. It has apparently been assumed that many requests are reasonable and should be answered. The problem then was to determine which ones were reasonable and to decide how they should be answered. It was suggested that the first issue should be that of questioning whether the psychiatrist should supply any information. This was then considered in terms of its effect on

psychotherapy. Obviously, therapy will be altered if the patient sees the psychiatrist as a possible informer as well as a helper.

If information is supplied, is it really useful? This brings us face to face with the issue of how well predictions can be made in instances involving many variables, some known but many unknown, which can be arranged in an exceedingly large number of combinations. Some comments were, also, made on the misleading effect of labelling.

The expectation that requests would be answered and the practice of complying, in part, stems from the general practice of medicine. Too little attention has been paid to significant social factors. It was suggested that psychiatrists might be seduced to claim that they possessed special ability to foretell the future. As a result "educated" guesses might be dispensed as facts.

During a period of hospitalization, the patient's family might have to be provided with information to participate in immediate decision-making. This stands in sharp contrast, however, to making decisions about the patient's ability to work or attend school

after he has left the hospital and is assuming responsibility for his own welfare.

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THE FOLLOW-UP OF DISCHARGED MENTAL PATIENTS BY THE PUBLIC HEALTH NURSE ¹

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Public health agencies have for years combatted diseases that threaten the physical well-being of man. Only recently have we seen the beginning of programs to meet public health responsibilities in the mental health field.

Traditionally, the focus in health department activities has been on prevention. We must continue to exert every effort toward the prevention of mental illness even though we must await more specific knowledge in many areas. At the same time, we must lend our efforts also to helping the person who is already mentally ill, and to his family.

The challenge is two-fold: 1. How can we make optimum use of resources to meet the increasing demands for services for the mentally ill beyond the walls of the hospital? and 2. What can a state-wide public health program provide in spite of the shortage of psychiatrically trained personnel? We should like to describe an approach to the problem that has been made in Georgia . . . a program of public health nursing services to the mentally ill.

The Georgia Department of Public Health, in cooperation with the Milledgeville State Hospital (the only state mental hospital in Georgia) initiated such a program on January 1, 1953, which was designed to serve the families of the mentally ill, and provide partial follow-up services for patients. Full details are available (1, 2, 3). This program began as a pilot project in 6 small, rural counties in the central part of the state with 2 larger, urban counties added the next year. At the end of the second year, 1955, an evaluation was done and this service made a part of the generalized public health nursing program in the state.

Prior to the initiation of this project, it had long been felt that a broad area of

health supervision was being neglected in our public health programs by the exclusion of the mentally ill. We felt very strongly that the psychiatric patient and his family faced many of the same kinds of problems that accompany any long-term chronic illness and that public health nurses could be helpful in much the same way as with tuberculosis, cancer, or cardiac conditions. We knew, from personal contacts with public health nurses, that many of them were being called upon by community agencies, by patients and families for varying kinds of services, but they were not working on any planned program basis in relation to the mentally ill.

It was never intended that the public health nurse do psychotherapy, but that her activities would be more in the area of supportive services. A number of activities in which the public health nurse could function in relation to the patient, the family, and the community were listed, not in the sense of setting limits, but rather as a guide by which she could feel more secure. These were:

1. Help the family to accept the patient's illness, his need for treatment, and perhaps hospitalization.

2. Interpret the hospital's rules and regulations, diagnostic and treatment procedures.

3. Encourage families to allow the patient to remain in the hospital until the medical staff felt that he was ready for furlough or discharge.

4. Encourage communication between the family and patient; between the family and the hospital.

5. Help the family to accept the patient back into the home and explain furlough or discharge procedures.

6. Help the family to return the patient to the hospital if further treatment is indicated.

7. Direct the family and/or patient to community agencies if additional services are needed.

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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8. Promote mental health education in the community.

9. Help the community to understand and accept the furloughed or discharged patient.

When we were ready to begin the pilot project, the state hospital designated the social service department as the health department's point of contact with the hospital. Inter-agency referral forms were developed for use by the 2 agencies in exchanging information regarding patients or families.

One of the foremost questions confronting us was how to find the people who were in need of service and establish a case-load for each nurse. All commitments are made through the county Court of Ordinary, and this seemed the logical place to start. Records in the Ordinary's office listed names of patient's committed, but at that time, there was no record of patients who had been released from the hospital. We took the problem back to the hospital and the following arrangement was made :

1. The hospital agreed to send to the county health department an abstract of the record of every patient in the hospital or out on current furlough at the time the county started the service.

2. The hospital would notify the health department when a patient was released on furlough or discharged, including voluntary admissions.

3. Information on newly committed patients would be furnished to local health departments only on request.

4. County health departments would arrange with the Ordinary for notification of all new commitments.

This arrangement provided the basic case-load ; additional referrals have come from local physicians and from community agencies as the service became known in the community.

Soon after the health departments began receiving referrals, a system of priority for home visiting was established as a further guide for the nurses. The priorities were established in the following order :

1. To families of newly committed patients or patients awaiting commitment.

2. To furloughed or discharged patients

- 3 To families of patients who could be

furloughed if home conditions were favorable and the family willing.

4. To families of patients considered to be institutional cases.

The frequency of nursing visits has been left to the judgment of the nurse, depending upon the needs of the patient and/or family, or other problems encountered in the home.

Reports of initial visits to patients and/or families are sent to the state hospital ; reports of subsequent visits are made only if there is additional pertinent information. The nurse visits patients released from the hospital as "restored" just as she does the patient on furlough, but makes a report on these patients only in the case of re-commitment.

As part of the preparation of the public health nurses for beginning this service, a 3-day orientation is held at the state hospital. The nurses observe the various treatment procedures, recreational and occupational therapies, attend diagnostic clinics, and are given lectures on selected topics by members of the hospital staff.

In-service education programs are conducted in local and regional health departments as requested, and consultation from the mental health consultant nurses and other members of the staff of the Division of Mental Health is always available.

As the program develops, the need for more adequate medical and psychiatric supervision for the patients is a problem that is a challenge to the 50 psychiatrists and the 3200 other physicians in the state, as well as to our health departments.

Georgia is a state comprising 159 counties, all but 10 of which have organized health departments. The counties are grouped together into 38 health districts and at the present time there are 26 full time medical directors and approximately 500 public health nurses employed. The expansion of this service into the 159 counties is proceeding. Public health nurses in 49 counties are now offering supportive services to families of newly committed patients, to families of patients already hospitalized, and to patients on current furlough or recent discharge from the state hospital.

to only a staff physician at the state hospital remarked,

I had a number of other who had been of many of our patients over the years. Now that we get reports from the public health nurses I feel that most of those who don't visit have some serious problem at home or just can't afford the trips. I feel better knowing it isn't lack of interest.

The clinical director of one of the services stated,

We, in the hospital, are vitally interested in what happens to the patient when he goes home. So much of the time we never know anything unless the patient has to return for further treatment. This program now keeps us informed about the patient after he returns to the community, and we appreciate that.

The social service department summarizes additional benefits.

Since the beginning of the pilot project in 1953 there have been valuable services rendered by the public health departments in the counties in the program.

Due to the education and interpretation given families of patients, there has been considerable increase in the interest of families. This has been manifested by more visiting to patients, more writing of letters, sending of gifts, and also more acceptance of the patients' returns to their homes.

Reports sent to the hospital by the public health nurses have been of great value to the medical staff. This information has given the staff a better understanding of the home situation and other environmental influences, and has been particularly helpful in the study of a case when the patient is being considered for furlough.

When the hospital has been unable to obtain a social case history in their routine procedures, the public health nurses or the local Department of Public Welfare have assisted the families in filling out a questionnaire summary.

The nurses' services have been valuable regarding the status of the next-of-kin. When a change in the next-of-kin is indicated, the hospital notifies the Ordinary of the patient's county of residence asking that another next-of-kin be designated. This information is very important to the hospital in the case of illness, furlough, or death.

Let us now look briefly at another program being developed in Georgia in which public health nurses are actively involved in follow-up services to mental patients and their families.

On July 1, 1957, funds were made available to the Georgia Department of Public Health by the Governor for the development of a program of intensive treatment of mentally ill patients in psychiatric units of general hospitals(4, 5). Patients are referred to the local health departments by their own physician or other appropriate medical sources. If certain financial and medical eligibility requirements are met, the application is accepted and the patient sent to the participating hospital nearest his home. Tax monies appropriated for this intensive treatment program are administered by the division of mental health; treatment is the responsibility of the three participating hospitals and their psychiatric staffs.

In this program, the public health nurse offers the same kinds of supportive services to patient and family as she does in the program just described. The major differences are:

1. Frequently, the nurse has more contact with the patient and family prior to hospitalization, during the waiting periods of non-emergency admissions.

2. Application for treatment must be made voluntarily.

3. Expansion of nursing services in the state hospital program is on a county by county basis. Applications for treatment of patients in this program are accepted from all counties, therefore many nurses are involved in follow-up services earlier. During the first year, applications were approved for 290 patients in 79 counties for the intensive treatment program.

4. Since all admissions are on a voluntary basis, there is less chance of the nurse being viewed as someone "spying" for the hospital.

5. In addition to other reports, a specific report is made to the division of mental health at a specified interval following the patient's hospitalization.

The mental illness-mental health problem is a tremendous one regardless of how it is approached. The shortage of resources is emphasized in the third annual report of

the Joint Commission on Mental Illness and Health (p. 6)(6) :

We have not found a community that has all the services needed in the mental health field, and one inevitable conclusion from any survey will be the need for the creation of new services, or expansion of existing ones, both in quality and quantity of service. This finding leads us to the major inconsistency in our whole programming in this area ; namely that manpower is not and will not be available for these new and expanded services.

We do not feel that we have the answer, but the programs just described are filling a need in this state. Furthermore, such programs point up a way of applying current concepts that emotional illness involves not just individuals, but cultural and environmental influences in the family and the community.

We are poignantly aware of the fact that if such programs continue to be developed over the country, some changes will probably be needed in nursing and medical educational programs in order to prepare more adequately the practitioners for the roles expected of them. At the same time, in-service educational programs must continue to supplement the educational needs of all levels of departmental staff.

SUMMARY

The Georgia Department of Public Health, in cooperation with the Milledgeville State Hospital,⁴ initiated a program of supportive services by public health nurses to mental hospital patients and their families in January, 1953. This program was not limited to the discharged patient, but included the patient and family at the time of commitment, during the patient's hospitalization, and after discharge to the community. At the end of 2 years as a pilot project, the program was evaluated and this activity included as a part of the generalized public health nursing program

⁴ The Milledgeville State Hospital was transferred by Executive Order, from the Department of Public Welfare to the Department of Public Health on April 24, 1959.

state-wide. It is now operating in 49 of the state's 159 counties.

A second program is presently being developed as a part of a state-aid program for intensive treatment of mentally ill patients in general hospitals. Essentially the same kinds of supportive services are offered to patients and families by the public health nurses.

These programs are ways of applying the current theoretical emphasis that emotional illness involves not just individuals, but situations and relationships in families and communities.

As modern public health programs seek to deal seriously with the problem of mental illness, a balance must be maintained between services to the sick and preventive and health promoting activities for total populations. The present program of the Georgia Department of Public Health, overlapping both areas, offers opportunity for continuing development of public health programs on a sound basis of experience which bridges gaps between hospital and community.

The development of newer programs and the involvement of public health nurses in a broader scope of health services raises many questions for those interested in the preparation of future public health nurses as well as the continuing education of those currently employed.

We believe this type program, modified to fit the special situation in each state, will be an important element in the total resources for offering follow-up services to the mentally ill.

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CLINICAL NOTES

Response to Trifluoperazine in Elderly Patients with Psychotic Illnesses by A. A. Baker, M.D. and J. G. Thompson, M.D. in the October issue of the *Journal of Mental Science*, p. 1082

EFFICACY OF TRIFLUOPERAZINE IN CHRONIC MENTAL ILLNESS

ROBERT B. CAHAN, M.D.¹

This is a report on a thirteen 8 month study constructed to test the efficacy of trifluoperazine (Stelazine) in a ward population of chronically regressed elderly female patients. Thirty women were chosen because they were not then receiving any psychopharmacologic therapy. Age range was 58 to 88, averaging 72. Average length of hospitalization was 20 years. Twenty-two patients were listed as having chronic varieties of schizophrenia, 6 chronic brain syndrome, and 2 had manic depressive psychosis, manic phase.

A double-blind key² was constructed to divide the group into placebo and drug groups. Initial dosage was 2 mg. b.i.d., raised by increments of 2 mg. daily at intervals of 10 days to 2 weeks. Preliminary weights, liver profiles, hematologies, vital signs, and target symptom interviews were obtained.

At the end of 4 months all patients had reached 24 mg. daily except those who had their medicine discontinued because of serious side effects. Two patients, both on Stelazine, were improved; and 3 were slightly improved, 2 on placebo and 1 on Stelazine.

The second phase of the study was begun by starting on Stelazine (2 mg. b.i.d.) those patients previously on placebo. Patients previously on Stelazine were continued on their previous dosage. Two patients were considered to have had side effects of such severity from the first trial of Stelazine that restarting the drug would be an excessive risk. One patient who had been on placebo only died during the first 4 months. The remaining 27 were placed on a progressively increasing dosage scale as

before. Some patients reached as high as 45 mg. daily, but most were leveled off at lower amounts in an effort to control serious side effects.

At the end of 8 months, 3 patients had "improved," 3 had "slightly improved," and 23 patients showed no noticeable or consistent change in ward behavior or mental status. Of the 6 improved, none had lost their grossly psychotic reactions. These 6 included the 2 patients with manic-depressive psychosis, and 4 with schizophrenia.

The only side effects definitely attributable to the Stelazine in this study involved muscular dysfunction. Eight patients were seen to develop a typical Parkinsonian syndrome with onset of incapacitating symptoms at dosage ranges of 10 to 17 mg. daily. This group included 2 of the 3 "improved" patients and 2 of the 3 "slightly improved."

Seven patients developed a severe, progressive, generalized muscular weakness of central nervous system origin with onset at dosage ranges of 6 to 17 mg. daily. No localizing sign or pathological reflex was noted on examination, but 2 of the 7 women had an early associated relaxation of the pelvic floor. An eighth patient developed a prolapsed uterus without generalized muscular weakness, the pelvic floor manifestations occurring at 6 to 14 mg. per day. None of the patients with muscular weakness was psychiatrically improved.

CONCLUSION

Trifluoperazine is considered to be of limited usefulness and considerable toxicity in an elderly female population.

The 8 patients with increased muscular rigidity having 4 of their number improved by Stelazine should be contrasted with the absence of psychiatric improvement among the 8 women with muscular weakness. Investigation of this phenomenon may reveal

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² Supplied as Stelazine by Smith, Kline and French Laboratories, Philadelphia, Pa.

³ Key arranged and conducted by William P. Boger, Director, Department of Research Therapeutics, Norristown State Hospital, Norristown, Pa.

dues to the operation of trifluoperazine.

On the positive side, no agranulocytic, hepatotoxic, or biliary static effects were noted. A therapeutic agent which can im-

prove the ward management of one half of the severely and chronically ill patients should be considered as part of the psychotherapeutic armamentarium.

EFFICACY OF DIVIDED AND SINGLE DOSE SCHEDULES IN INSULIN COMA THERAPY

ARNOLD G. BLUMBERG, M.D., PETER LADERMAN, M.D.,
AND MAX FINK, M.D.¹

While many technics for the administration of insulin in insulin coma therapy have been advocated (3), recent reports (4) have assessed multiple divided doses as more effective and safer than other methods. Previous studies indicated that the production of coma was directly related to the level of hypoglycemia and its duration (1) and that deep coma for sustained periods was essential to the treatment result in insulin therapy (2, 3). It seemed reasonable to test the suggestion of increased efficacy for a modified insulin administration by comparing the length and depth of coma and the blood sugar levels in patients treated both by single and divided insulin dose methods. If the divided dose schedule were more effective, it would be expected that the induced coma would be equal or greater in depth and duration; that the time for onset would be equal or shorter; and the blood sugar levels lower for divided dosage than single administration.

METHOD

Consecutive patients referred for insulin coma therapy were given daily increasing amounts of insulin in 3 divided doses until a coma level was achieved. The same total dosage was then given in one injection. Six patients were studied in this manner. Each patient was started on the following insulin dose schedule: first day—10 units; second day—10 units and 2 doses of 5 units each at intervals of one half hour; third day—3 doses of 10 units at half hour intervals; and fourth day—20 units followed by 2 doses of 10 units. On each successive day

the dose was increased in 10 unit increments. At the time when coma was produced, a single dose equivalent to the 3 doses was given on the succeeding day.

For each treatment, coma depth and the time of onset was determined. Coma was defined as the loss of consciousness (failure to respond meaningfully to verbal signals), associated with the appearance of the Babinski reflex, and the loss of the lid reflex. An adequate coma treatment was defined as the persistence of this depth of coma, or deeper (loss of pupillary or corneal reflexes) for at least one hour.

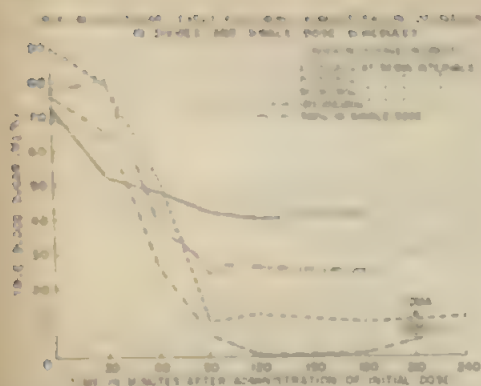
At half-hour intervals true blood sugar levels were serially determined by the Somogyi method. The resulting blood sugar curves and their level at the time of onset of coma, were compared for each subject with the blood sugar curve and coma data obtained on a single administration of an equivalent dose.

OBSERVATIONS

The blood sugar levels at various intervals after the administration of divided doses of insulin compared with a single dose of insulin in one patient is presented in Figure 1. This pattern has been reproduced in each of the patients studied. For each, the blood sugar curve drops rapidly in the first hour without respect to the initial dose, and flattens at progressively lower levels as the total dosage of insulin increases. Coma characteristically is reported in subjects in whom the blood sugar curve is below 21 mg.% for an extended period of time (1).

The time of onset of coma and the blood sugar level at coma in each of the patients is presented in Table 1. In five of the 6

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cases, there was no difference in the time required to induce coma by either the single or the divided dose methods. In one subject (Sc) coma was observed in 1½ hours with a single dose as compared with 3 hours with divided doses.

TABLE I

ONSET OF COMA AND BLOOD SUGAR WITH DIVIDED AND SINGLE DOSAGE SCHEDULES

	Time for Coma (minutes)		Blood Sugar Value (mg. %)		
	Insulin Units	Divided Dose	Single Dose	Divided Dose	Single Dose
D	330	210	190	4	0
G	360	210	210	14	4
H	270	210	210	15	15
Sc	390	180	90	12	7
Se	360	210	210	12	8
V	210	135	150	8	20

The average blood sugar at the time of coma was lower with the single doses than

with divided doses in 4 of the 6 cases. It was identical in one and lower with the divided dose in one.

As there was no evidence in these studies that the divided dose method was more effective in the production of insulin coma than the single dose method, the divided dose technic was discontinued.

CONCLUSIONS

The coma produced with the divided insulin doses did not occur earlier and was not deeper than that produced by the single dose. The increased effort in divided dose schedules is justified neither by increased safety nor by increased depth or duration of the induced hypoglycemia.

There was no evidence that the initial dose of insulin sensitized the subject so that subsequent doses produced a greater hypoglycemic effect. The total hypoglycemic effect of divided doses appears to be less, if anything, than the effect of a single dose.

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A RAPID URINE COLOR TEST FOR IMIPRAMINE (TOFRANIL, GEIGY)

IRENE S. FORREST, Ph.D.,¹ AND FRED M. FORREST, M.D.²

Rapid, simple, semi-quantitative urine color tests as an objective means of evaluating actual drug levels were found of value in the management of hospitalized as well as ambulatory mental patients, and a number of such tests were previously re-

ported by us for various phenothiazine derived drugs (1-4).

A new psychopharmacological agent, imipramine (Tofranil), 5-(3-dimethylamino-propyl)-10, 11-dihydro-5H-dibenz [b, f] azepine hydrochloride, has recently been introduced and is widely used in depressive states, particularly in endogenous depressions. In view of the fact that depressive pa-

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tients are frequently reluctant to ingest medication, it was especially desirable to have a simple urine test to determine instantly whether a patient is actually taking the prescribed drug dosage. Imipramine is not a phenothiazine drug, but its ring system containing two CH_2 groups in the place of the sulfur atom in phenothiazine compounds, is sufficiently similar in structure to confer certain similarities of physiological drug metabolism, e.g. formation of metabolites of an intermediary oxidation level. (All of our rapid color tests, for phenothiazine compounds as well as for imipramine, are based on the reactions of these intermediary urinary drug metabolites with metal salts in acid vehicles of pH 1 or less.)

A satisfactory reagent for the demonstration of urinary Tofranil consists of a mixture of:

25 parts	0.2%	potassium dichromate solution
25 parts	30 %	(by volume) sulfuric acid
25 parts	50 %	(by volume) nitric acid
25 parts	20 %	(commercial product) perchloric acid

The above Tofranil reagent reacts also with phenothiazine compounds, but in contrast to the phenothiazine reactions, in which the colors are pink, purple or violet, Tofranil yields only green shades.

The test is performed by placing 1 cc. of urine in a test tube, adding 1 cc. of the reagent, mixing gently and observing the resulting color development. Daily Tofranil doses of 25 to 250 mg. (the latter being the highest dose seen) yield a scale of colors ranging from pale olive to deep emerald green. The lower doses of 50 mg. per day or less produce color reactions of lesser stability, persisting for 15 to 25 seconds, while the medium and higher doses yield increasingly stable color complexes persisting for more than 60 seconds in the highest doses. However, even the short lived reactions of the lower dosage levels may be properly interpreted with the help of a color chart which is currently in preparation and

will be published shortly. In contrast to the numerous tests for phenothiazine compounds, the Tofranil test is a simple, rapid, and accurate test for the drug, and its metabolites, and unlike the many tests for phenothiazine compounds, it is applicable to a wide range of drug concentrations, other than those of drugs at concentrations many other than 1:1000, to take qualitative tests. Its green color reactions were seen in testing a urine specimen containing Tofranil plus a phenothiazine compound, the latter giving a pinkish purple to violet color reaction due to the phenothiazine compound, appearing immediately and fading rapidly, and is then followed by the more stable development of green color due to Tofranil metabolites. Likewise, the presence of urinary Tofranil does not interfere with the various tests for individual phenothiazine drugs (1-4), and the tests for Tofranil and the respective

phenothiazine compound in patients on combination drug therapy may be carried out on two different 1 cc. samples of the same urine specimen.

The Tofranil reagent itself is a pale yellow solution. When mixed with control urines containing no drugs at all or pharmacological agents other than phenothiazine compounds, it shows colors from pale yellow to ochre or orange shades. Green reactions have been exclusively obtained in the presence of Tofranil.

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THREE YEARS OF TREATMENT OF CHRONIC HOSPITALIZED PSYCHOTIC INDIVIDUALS WITH PROMAZINE (SPARINE)

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A study was made over a 3-year period of 180 chronic hospitalized psychotic patients, 95 men and 85 women, for whom promazine hydrochloride therapy (Sparine®-Wyeth) was prescribed. The patients ranged in age from 16 to 88 years and the duration of their mental illness varied from 1 to 62 years with an average of 15 years.

The patients were selected at random, the only requisites being an increase in psychokinetic activity, manifested by restlessness or agitation, complications from chlorpromazine therapy, or lack of improvement from the use of other methods of chemotherapy.

The patients came from two groups; those in whom complications developed as a result of chlorpromazine therapy (58 patients), and those who received promazine therapy during the initial evaluation studies (122 patients).

The dose of promazine administered varied from 50 mg. given at bedtime to 400 mg. q.i.d. The initial dose of promazine hydrochloride was administered according to the psychokinetic activity of the individual. If the symptoms of restlessness, agitation, or proneness to get into difficulties with other patients were mild, 100 mg. of promazine, two or three times daily, usually were prescribed. When the behavior of the patient was severe, 400 mg. of promazine, t.i.d., were prescribed. One patient in the group received 1600 mg. of promazine daily for a period of approximately 15 months. When patients accepted the tablets only to collect them or to eject them later, liquid promazine concentrate in equal doses in aromatic (glucose) solution was substituted for the tablets. When the liquid form of medication was refused, one-half the prescribed dose was given intramuscularly.

Statistically, 47 (26%) of the 180 patients showed marked improvement in behavior, and 82 (46%) showed moderate improvement. There was not any improvement in 51 (28%) of the patients; however their

behavior did not become worse.

Improvement in their psychosis was also noted; marked improvement occurred in 23 patients (13%) and moderate improvement occurred in 54 patients (30%). In 98 (54%) patients there was not any psychotic improvement and, in 5 (3%), there was some indication of mild regressive trends.

Promazine adequately modified the formerly disturbed behavior pattern of the chronic schizophrenic patients so that psychotherapy was facilitated and, as a result, made it possible for 26 patients to be released from the hospital. Two patients returned from convalescent care because they did not take the promazine as directed.

The results of this study confirm the conclusions of other authors of the need for adequate medication, but within the prescribed limits of the medication and in the range up to 1200 mg. divided equally into three doses given daily.

Promazine has a very satisfactory range of safety, the effectiveness has been proved, and the complications or side effects are negligible.

Although chlorpromazine is a useful adjunct in psychotherapy, complications frequently develop from its use. The 58 patients in whom these complications developed on chlorpromazine therapy were safely treated and their disturbed behavior patterns sufficiently modified by the use of promazine therapy to enable them to return to their prepsychotic social environment. Of the 58 patients who were placed on promazine therapy because of the development of complications on chlorpromazine therapy, 49 (85%) showed resolution of their complications and have been continued on promazine medication. Fifteen of the 49 patients who improved are on convalescent care.

The hypothesis that increased potency of a phenothiazine associated with a high incidence of extrapyramidal symptoms is associated with a greater therapeutic effectiveness is not substantiated by this study comparing the effectiveness of chlorpromazine and promazine over a 3-year period.

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OBSERVATION ON TWO PSYCHOTOMIMETIC DRUGS OF PIPERIDINE DERIVATION—CI 395 (SERNYL) AND CI 400¹

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AND R. CAIRNS B. AITKEN, M.B., Ch.B.²

This report describes the sensory blocking action of two anaesthetic drugs CI 395 and CI 400. CI 395 is Sernyl:—1—(1-phenylcyclohexyl) piperidine monohydrochloride, and CI 400 which is N-ethyl—1 phenylcyclohexylamine monohydrochloride. The phenylcyclohexyl nucleus is common to both drugs.

PROCEDURE

Four schizophrenic and 14 patients with mixed psychoneurosis were given both drugs in dosage of 0.05 to 0.2 mg. per kg. of body weight. Intravenous injections produced the most striking effects within minutes; intramuscular injections were less marked but more prolonged; oral administration was least effective.

Sernyl produced tachycardia, sweating, excessive salivation, disturbances of consciousness, cerebellar signs, motor effects, loss of deep pain sensation and anaesthesia. These changes were mild or absent with CI 400, which caused disorder of thought with apathy but no body-image disturbance. Both drugs produced mild hypertension.

With Sernyl psychoneurotic patients showed apathy, then anxiety, followed by disturbance of body-image, feelings of unreality and depersonalization, together with thought disorder, disorganization of intellectual processes and difficulty of comprehension.

Two patients became hostile and paranoid and one experienced auditory hallucinations. Euphoria occurred in 6 patients after intravenous injection.

The body-image disturbance which occurred in all patients was well recalled after effects of Sernyl had disappeared. Feelings of "floating in outer space" were frequently

described. A tendency for patients to maintain catatonic limb postures was present with Sernyl and absent with CI 400.

Chlorpromazine, 50 mg. intramuscularly seemed to antagonize the psychotomimetic effects of Sernyl and produced a return to normal body-image.

In the 4 schizophrenic patients, Sernyl produced an increase in the schizophrenic symptoms with exaggeration of thought block, body-image disturbance and depersonalization. Two of these patients who received LSD 25 previously, described their reaction to Sernyl as different to LSD 25. CI 400 on the other hand, produced an alleviation of symptoms and mild clinical improvement.

COMMENTS AND SUMMARY

Based on the work of Elkes and Shore, Sernyl appears to exert its action by the release of adrenaline and noradrenaline in association with the depression of the availability of serotonin in the brain. This is consistent with Brodie's hypothesis⁽¹⁾ that serotonin and noradrenaline are antagonistic chemical mediators regulating the central autonomic system.

The importance of kinaesthetic input in preserving the intactness of the body-image is well recognized in studies of the effects of sensory deprivation⁽²⁾. Nocturnal delusions of the senium due to loss of familiarity with surroundings is also a well recognized phenomenon⁽³⁾. Hence, disturbance of kinaesthetic input, whether taking place primarily within the brain, due to externally administered agents such as CI 395, or outside the brain as in sensory deprivation, leads to psychotic behaviour with features similar to schizophrenia. "Information input underload" and the disturbance of coding or integration of sensory stimuli at a higher level may be the possible cause of psychotic behaviour.

The reversibility of the psychotomimetic effects produced by Sernyl with chlorpro-

¹ The authors express their appreciation to Parke, Davis & Company, Ltd., Detroit, Mich., for their supply of drugs used in this study.

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mazine, suggests a common mechanism with that seen in temporary psychotic states, such as acute paranoid or schizophrenic reactions. This would support the tentative hypothesis of Luby and associates⁽⁴⁾ "that certain primary symptoms of schizophrenia may have their basis in a dys-synchrony or defect in proprioceptive feedback."

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REPORT OF HYPOMANIC EXCITEMENT WITH IMIPRAMINE TREATMENT OF DEPRESSION

C. E. SCHORER, M.D.¹

With the recent flood of anti-depressive drugs, many reports have appeared concerning their physical side-effects and toxicity. But the psychic side-effects need to be kept in mind because they can create serious problems requiring hospitalization or other immediate treatment. Psychomotor and psychological changes of a pathological sort, in fact, have been mentioned briefly in earlier articles on imipramine. Lehmann reports visual hallucinations or hypomanic excitement appearing in 7 of 84 patients treated with that drug⁽¹⁾. The commercial description of imipramine lists agitation as the commonest side-effect requiring discontinuance of therapy—25 times more common than any other psychic or physical reaction⁽²⁾. Azima describes elation or hypomania in 10 patients out of 145 given the drug⁽³⁾.

This paper deals specifically with the occurrence of hypomania during imipramine treatment. At this hospital, 88 patients have been given imipramine in the usual dosages. Among these, 6 instances of hypomanic excitement appeared, with such typical features as elated mood, grandiose schemes, pressure of speech, restlessness, and combativeness. In some instances this behavior stopped a few days after the drug was stopped; in other patients, it continued for more than 8 weeks after stopping imipramine. A patient report follows:

A 58-year-old white woman became gloomy, apathetic, unable to do household tasks, anorexic, sleepless, and suicidal beginning in

June, 1958. She lost 30 pounds and became more depressed in spite of treatment with a combination of amphetamine and amobarbital. No previous episodes of depression or hypomania were admitted. When first seen in the outpatient department, in June, 1959, she was given imipramine 25 mgm. q.i.d., and in two or three days rapidly changed. She visited and irritated others by her excessive enthusiasm and constant calls, and was admitted to hospital on July 2, 1959. Imipramine was discontinued and the ward physician gave her large doses of trifluoperazine for her overactivity. By July 7, she showed extrapyramidal signs, but was still over-talkative, distractible, and verbosely enthusiastic for the hospital and the staff. An EEG and routine laboratory tests were normal. Psychological test performance was impaired by her inability to sit still and finish; the tests showed euphoria, defects of attention, flight of ideas, and pressure of speech. On July 17, psychological tests still showed minimal organic changes and the defects of attention noted ten days earlier. Prochlorperazine was substituted as the patient became calmer, but even when discharged on September 4, she still showed signs of hypomania, although no longer taking imipramine for two months.

This case illustrates several important problems in imipramine treatment. Is the hypomania a drug-induced reaction, or is it merely a variant, an equivalent of the depression? Is this altered behavior truly a side-effect of the drug, or, since it continued long after imipramine was stopped, merely another pathological expression of the same basic excess of anxiety, permitted or provoked by the effect of imipramine?

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If the latter possibility is accepted, what is the neurophysiological or psychodynamic mechanism for the change(4, 5, 6, 7) ?

Another question raised by this survey of our depressed patients is whether or not the change from depression to hypomania is unique for imipramine-treated patients. It also occurs in manic-depressive patients without medication, in psychotherapy, and with ECT, although the exact incidence is not known. It has occurred in 3 of our patients receiving new monoamine oxidase inhibitors. Besides, hypomanic excitement appeared in a depressed boy of 16 with schizophrenia (schizo-affective type) on imipramine administration, and was treated in a similar way to the above described patient. Imipramine-induced hypomania, therefore, appears not merely in the manic-depressive patient, but seems a possible reaction whenever a severe affective disorder occurs. Adequate treatment consists

of discontinuing imipramine, administering phenothiazines, and, if necessary, hospitalizing the patient.

In summary, hypomania may occur during imipramine treatment of depression, and may continue long after imipramine is discontinued.

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THROMBOCYTOPENIA IN PROLONGED CHLORPROMAZINE THERAPY

JOHN R. SHAWVER, M.D., AND STANLEY M. TARNOWSKI, M.S.¹

A patient in our hospital developed thrombocytopenia in February, 1958, after receiving 200 mg. of chlorpromazine twice daily continuously since March 19, 1956. The psychiatric diagnosis was schizophrenic reaction, chronic undifferentiated type. The thrombocytopenia produced bleeding from the gastro-intestinal tract. This in turn produced anemia with a red blood count of 1,840,000; hemoglobin 7 gms.; white blood count 4,300; neutrophils 61; lymphocytes 35; monocytes 4; hematocrit 22; platelet count 66,500. The next day the platelet count was 38,640. As soon as this condition was discovered the chlorpromazine was discontinued. A splenectomy was performed by our surgical consultant. Following the splenectomy the platelet count rose to 116,000 but in a few days dropped to 50,000 where it remained. The patient developed a lung abscess. Treatment for this condition was ineffective and the pa-

tient died. During treatment he received a total of 69 pints of whole blood.

Our experience in this case caused us to wonder if any relationship between the administration of chlorpromazine and the development of thrombocytopenia can be demonstrated. We have studied 245 patients who have been on chlorpromazine administration for 2 or more years, with a drug range from 100 mg. to 800 mg. per day. In addition to routine hematological procedures, platelet estimations were performed employing Breecher's(1) method which utilizes a phase microscope. In our group only one individual reflected a low platelet count of 77,000 per cmm. coincidental with a leukopenia of 2,150 per cmm. No abnormalities were noted in this case with regard to interference of bleeding and clotting mechanisms as demonstrated by normal bleeding and coagulation times, clotting retractions, prothrombin and prothrombin consumption times and fibrinogen. Upon drug removal and 6 months later, the

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low platelet count and leukopenia were still present.

Forty-three patients of our original group revealed low normal platelet counts (175,000 per cmm or less) and were re-evaluated after an additional 6 months of chlorpromazine with essentially no changes encountered.

Ayd² reported no dramatic hematological changes without platelet counts being performed, in a survey of 50 patients administered chlorpromazine for 2 to 4 years. LeBlanc³ reported a marked drop in platelets following a single injection of chlorpromazine in animals.

SUMMARY

Two hundred and forty-five patients who had been on chlorpromazine medication for

two or more years were evaluated hematologically, including platelet estimations. Only one case was found with a relatively low platelet count coincidental with leukopenia in which no interference in bleeding or clotting mechanism could be demonstrated. From our study we conclude that the development of thrombocytopenia in patients who are on prolonged therapy with chlorpromazine is rare. We plan to evaluate the 245 patients in this study at yearly intervals.

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CASE REPORTS

AGRANULOCYTOSIS FOLLOWING USE OF IMIPRAMINE HYDROCHLORIDE (TOFRANIL)

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There have been no cases of agranulocytosis occurring as a complication of the use of imipramine hydrochloride (Tofranil) reported in the literature. Since this drug is now widely used in the therapy of depression in both office and hospital practice, it is considered important to publish the occurrence of agranulocytosis following its use.

W. M., a 64-year-old white, married male was admitted to the Albany VA Hospital on 7/22/59 with the history of depressed feelings of a few months' duration. Pertinent medical history included probable minor cerebral vascular accidents in the past with no gross residuals. There was no history of any medication or exposure to toxic substances which would be considered likely to produce bone marrow depression. Psychiatric diagnosis was involutional psychotic reaction and electroconvulsive therapy was planned. The admission CBC was: WBC—6,450; 77% neutrophils, 20% lymphocytes, 1% monocytes, 2% eosinophils; hemoglobin—14.8 grams; hematocrit—48. The admission urinalysis showed a 1-plus albuminuria, 30-40 RBC's per hpf. and 2-4 granular casts. The patient's physical status was evaluated by a medical consultant who found evidence of arteriosclerotic heart disease with mild decompensation, mild hypertension, and osteo-arthritis. He was redigitalized, having been on digitoxin previously.

Prior to shock therapy, he was placed on

Tofranil 25 mgm. t.i.d. p.o. for one week with an increase to 50 mgm. t.i.d. for the next 4 weeks. It was then discontinued because of negligible improvement in his mental status. A CBC one week after start of Tofranil was within normal limits. At the end of the fifth week of Tofranil he was found to have a WBC of 2,650 with 84 neutrophils. Three days after the drug was discontinued a bone marrow aspiration showed severe hypoplasia particularly of the granulocytic series. Erythrocyte production was also depressed but not as severely. Megakaryocytes were normal in number. At that time there were no neutrophils in the peripheral blood. Lymphocytes predominated but no abnormal cells were seen. A few hours later he developed a fever of 100-103 and sore throat. He was treated with antibiotics followed by corticosteroids. Simultaneously with the first dose of the latter and probably unrelated to it, 6% stab forms appeared in the differential. There was a rapid return to a normal WBC and differential over the next few days. A slight drop in hematocrit was also quickly restored. Following recovery the steroids were discontinued. A second bone marrow aspirate taken after recovery was normal.

During the course of hospitalization other drugs taken included two doses of sodium phenobarbital intramuscularly, grains 2, digitoxin 0.1-0.2 mgms. daily, mineral oil emulsion, Dulcolax and Fleet's phosphosoda. It is our opinion that agranulocytosis in this case was probably due to imipramine hydrochloride (Tofranil).

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PRELIMINARY REPORTS

TREATMENT OF DEPRESSIVE STATES WITH MARPLAN

JANE E. OLTMAN, M.D., AND SAMUEL FRIEDMAN, M.D.¹

The present report is an evaluation of Marplan in the treatment of depressive illnesses.

Marplan² is an amine oxidase inhibitor with the chemical formula: 1-benzyl-2-(5-methyl-3-isoxazolylcarbonyl) hydrazine. Treatment was initiated with one tablet (10 mg.) t.i.d.; the dose was increased as necessary, usually within 7 to 10 days, to 5 or 6 tablets daily. Although favorable response was apparent in some instances within the first week, optimal results usually did not appear until the 3rd or 4th week of treatment. Following maximal response, maintenance therapy was continued, usually at a level of 2 to 3 tablets daily.

The case material consisted of 100 patients admitted to the Fairfield State Hospital during the past 8 months. There were 83 women and 17 men. They ranged in age from 28 to 82; 55% were in the 5th and 6th decades. The diagnostic grouping included: psychoneurotic reactive depression—33, psychotic depressive reaction—14, manic-depressive reaction—35 (depressed—27, circular—6, confused—2), involutional psychotic reaction—10, and arteriosclerotic or senile reaction with depression—8. In general, the illnesses were acute or subacute, and the degree of depression was relatively severe.

Results of treatment were regarded as eminently satisfactory. Of the entire group, 70% were considered to have achieved a remission (47%) or much improved status (23%). The factors which may have contributed to therapeutic success or failure were not clearly crystallized. Males and individuals over 70 seemed to react somewhat less favorably. Concomitant organic factors did not mitigate against satisfactory results. Multiplicity of attacks did not

appear to be a significant factor. Results in the circular manic-depressive group were comparatively poorer than in the series as a whole; however, the number in this group was small.

Indications for the use of Marplan run parallel to those for ECT with respect to depressive illnesses. However, the two modes of treatment should not be regarded in antagonistic terms. In some instances, ECT is preferable; in others, drug therapy may be the treatment of choice. For example, of the 70 patients in the successful drug group, 16 had been recently treated with ECT, without effect or with prompt relapse. These patients, previously refractory to ECT, responded well to Marplan. Ten of the 30 patients refractory to Marplan were then treated with ECT; 50% responded well.

Situations which especially favor the use of Marplan are: the presence of physical factors which make the administration of ECT either hazardous or untenable; the intervention of complications or physical illness after the initiation of ECT; refractoriness to, or relapse following ECT, or when maintenance ECT is required to preserve a satisfactory level; refusal of permission for ECT. Since optimal effect of drug therapy may not appear until the 3rd or 4th week of treatment, ECT is preferable whenever there is significant suicidal risk or when immediacy of response is otherwise desirable, as in the presence of severely depleted nutritional status.

With respect to the ultimate level of improvement and total duration of treatment, Marplan was found to compare favorably with ECT in many instances. It appears probable that the number of ECT treatments cannot be reduced by the concomitant administration of Marplan. However, there was frequently stabilization of the effect of ECT by the simultaneous or subsequent use of the drug. It is difficult

¹ Clinical Director and Assistant Superintendent, respectively, Fairfield State Hospital, Newtown, Conn.

² Generous supplies of Marplan (trademark) were furnished by Hoffmann-LaRoche, Inc.

at present to estimate how long the drug must be administered. Our observations thus far would indicate that antidepressant drugs must be continued for some time after apparent remission of the attack.

As with ECT, the tendency to swing from the depressive phase to a mild hypomanic state was also noted with Marplan. Brief omission of the drug followed by reduction of the previous dosage usually alleviated the condition.

Complications or side effects were few and minor. They consisted chiefly of mild dizziness, headache or sensation of fullness

in the head, and feelings of weakness or shakiness. These occurred more often in elderly patients; they could be ameliorated by reduction of dosage. There was no clinical evidence of hepatic damage, and liver function profiles were unchanged.

SUMMARY

Marplan is a safe, effective drug in the treatment of depressive states. Good to excellent results were obtained in 70% of a series of 100 hospitalized patients suffering from depressive illnesses. Complications or side effects are minor.

PRELIMINARY REPORT ON A NEW PSYCHOTROPIC COMPOUND (RO 4-0403/4)

WALTER KRUSE, M.D.¹

The clinical evaluation of a new psychiatric drug is always a stimulating experience. The present study seemed particularly interesting since initial testing by a number of European investigators⁽¹⁾ had shown the drug to have antidepressive as well as tranquilizing properties. Ro 4-0403/4² is a thioxanthene derivative (2-chloro-9-(3-dimethyl-aminopropylidene)-thioxanthene). Comparison of its structural formula with that of chlorpromazine reveals a rather minor difference between the two: the nitrogen in the second ring of the phenothiazine is substituted by carbon and the side chain is attached to it by double bond.

So far we have treated 30 female hospitalized psychiatric patients with this new drug for a period of 2 months or more. Twenty-three of these patients had been sick more than a year, 7 were more acutely ill. All patients were depressed. Ten belonged to the manic-depressive group, 8 were involutional depressions, 6 were schizophrenies with marked and persistent depressive features, and 6 were reactive depressions of the psychoneurotic category. Ages were between 26 and 64, average age was 49 years. Average duration of illness was 2.8 years. All of the chronic cases had had pre-

vious treatment (ECT, phenothiazines, imipramine, and MAO inhibitors) and had failed to respond. None of the acute cases had previous treatment. Ro 4-043/4 was given in tablet form. Starting dosage was 25 mg. t.i.d., highest dosage was 400 mg. daily. A few patients responded satisfactorily to a dosage of 100 mg. daily, most of them needed 150 mg. Further increases helped only in 2 cases and did not help in 6 cases. Already on the first or second day a certain sedative effect was noticed and a very definite improvement of sleeping habits. A lifting of the depression occurred as early as 3 days after beginning of treatment, in most cases after the first week and before the fourth week. Ro 4-0403/4 was well tolerated. There was some initial drowsiness in 5 of the 30 patients. Blood pressure dropped an average of 15 mm. But in the case of a 51-year-old patient, the BP dropped to 56/40 on the second day, and treatment had to be discontinued. This patient had shown similar reactions to phenothiazines, imipramine, and MAO inhibitors. Eight patients complained of dryness of the mouth. No other unpleasant reactions occurred in this series of patients.

RESULTS

Eleven of the 30 patients showed excellent response and were able to leave the

¹ Danvers State Hosp. Hathorne, Mass.

² Ro 4-0403/4 was provided for this study by Roche Laboratories, Nutley, N. J.

hospital on extended visits. Ten patients showed some improvement, and 9 were essentially unimproved. As expected, the 7 acute cases (6 psychoneurotics and 1 manic-depressive) responded better than the chronic ones. While 6 of them showed excellent response the seventh, a psychoneurotic depression, improved only moderately. Only 5 (2 manic-depressives and 3 involutional depressions) of the 23 chronic cases could be classified as "excellent results," but it should be mentioned that none of these patients had responded to previous treatments, including MAO inhibitors and imipramine. Of the remaining 18 chronic patients, 9 showed some improvement: they slept better, had a better appetite, and were less agitated. They were also less depressed as evidenced by their behavior and facial expression, but subjectively there was little or no change of mood.

One case of a circular type of manic-depressive illness was of particular interest. Treatment had been started when patient was in a depressive phase. Within 10 days the depression lifted and the patient was

on home visit. After a week she became hypomanic. Treatment with Ro 4-0403/4, however, was continued and in a few days its tranquilizing effect became very clear. The patient was thus able to remain home. A few weeks later the patient's mood had finally returned to a normal level.

Delusions and hallucinations in schizophrenic patients were little affected by this drug, but the hypochondriacal ideas found in depressive patients responded surprisingly well. Sleep was promptly improved, and this seems particularly important since neither imipramine nor the MAO inhibitors seem to be of much help in the insomniac cases.

In spite of the small number of patients in this study the results especially in the chronic cases indicate that Ro 4-0403/4 is a potent antidepressive agent. If further experience supports our preliminary findings it will certainly find its place in the treatment of depressed patients.

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COMMENTS

NEW MENTAL HEALTH ACT. ENGLAND AND WALES

Elsewhere in this issue will be found a discussion of the new Mental Health Act in England and Wales which Dr. Walter S. Maclay, Medical Senior Commissioner of the Board of Control, has been kind enough to prepare specially for the Journal at our request.

The new Act replaces in one piece of legislation many Acts of the past 70 years. It is the result of a vast amount of study

and administrative skill.

It gives expression to the entirely new way in which mental disabilities are being considered and dealt with by those best qualified to judge.

Dr. Maclay's presentation of the important features of the new Act should be of great interest to all interested in the care and treatment of mental patients and especially those bearing responsibility therein.

MENTAL HEALTH—BACK TO THE COMMUNITY!

Tens of millions of words have been written, and are yet to be composed on the subject of our national mental health situation, as we continue to struggle for management of a problem which sometimes seems to enlarge more rapidly than the solutions come to light. Yet at long last the time is right, and the message is in the wind; heretofore scattered and haphazard efforts to gain information, promote planning, and erect an organizational structure which will facilitate adequate prevention and treatment are merging into one deep, unidirectional channel. As individual citizens and as medical planning groups we have an increasingly clear idea where we are going. If a slogan has not been drawn from the tumult of detail, this is because we have felt no need for it. Yet as a descriptive summary of present trends, the simple words, "Back to the Community" have meaning and usefulness. The development of community orientation is more prepossessing than it may first seem, for it gains its importance from consistency with the currents of our national life. A concept is right and timely, adjustive and successful to just the extent that it is consistent with the wider dynamic milieu into which it is introduced. At the community level, the patient and the various financial and mechanical issues of mental health prevention and treatment are personalized; when this happens, action results.

Whatever multiple causes may be assigned by the sociologists, the fact stands clear that today the process of decentralization in American living has become a flood-tide. The bright call of the mechanized mob has lost its urgency, and almost no one wants to be "Mr. Average" any more. This is clear not only in the stylized, neurotic individualism of today's young writers, and in the peculiarities of society's "fringe groups," but also in mundane daily affairs. Suburban homes and the shopping centers which organize them into small communities, small cars which increase the driver's freedom of operation in the mobile environment, decentralization of industry and banking, increasing competition in the standard trade markets such as tobacco, and the emphasis on individualism which keynotes modern advertising are but a few examples. People seek out new and fantastic hobbies and sports, perhaps only to devote some corner of the week to "being themselves" in a unique way.

If the need for individuality is so blatantly expressed by the emotionally healthy, and if satisfaction is often so pitifully incomplete, how much more intense are the needs and frustrations of the mentally ill? These are the personalities who have become casualties of our over-mechanized culture—a culture with too many demands to meet, too many choices to make, too many rules to remember.

The gadgets of our existence may have improved in efficiency, but is it too trite to point out that man evolves a bit more slowly, that he struggles along with the same old physical machine, and what is more, the same old psychological machine? The tools of happiness today are expressly what they were hundreds and perhaps thousands of years ago. They include a firm sense of one's identity as separate from the environment, and yet an established and productive role in that environment. They include secure, lasting relationships with family, friends, employer, and the corner grocery—relationships which are not vulnerable to the tide of fortune, or someone's "bad mood."

It is in this context, then, that reorganization of the national mental health program should be undertaken.

1. Provide the patient with a treatment setting in which he can retain his individuality (or regain it), where he can belong as part of the group (or learn how to), and we will have provided him with the tools of recovery. Small hospitals well-spaced geographically, should replace the massive, mechanized structures of yesterday, which still house the lost lines of nameless faces.

2. The aim of good psychiatric treatment is, and always has been, the realignment of the dynamics of the personality, in such a way as to capitalize on the patient's strengths, and reduce the influence of his frailties. Then let us capitalize on his strengths! Let us use his relationships with family and friends, his job, his social interests, his myriad ties with his own community. Let us offer help in or near the community, in smaller mental hospitals, in psychiatric units within general hospitals, in outpatient mental hygiene clinics, in the offices of psychiatrically-oriented general practitioners. Let us build vocational rehabilitation programs around "day-and-night" hospital plans, and employers who can offer "stress-graded" work. Let us return the patient from his illness by means of a steady ladder of increased community participation, with "halfway houses," family counselling, follow-up psychotherapeutic guidance.

3. The mechanism of substituting re-

versibility for the irreversibility which formerly led so many patients into deeper mental illness and eventual custodial care is a simple one. Open the lines of communication and facilitate a free flow of patients between the community and the hospital. Remove legal restrictions and change commitment procedures, so that the trail to a public mental hospital does not become a slippery, one-way street. The choice of treatment level type and setting should be flexible and available to all patients for a precisely optimal period. Then, and only then, will we fulfill our responsibility for guarding the mental as well as the physical health of everyone in the community.

The responsibility for this type of community-centered mental health program falls squarely on those shoulders most competent to carry it—those of the busy family and general physician. He knows, or should know, his community, its resources, its people, and its problems. The conduct of both prevention and treatment of mental illness falls within the proper realm of his judgment and control. A doctor dedicated to the promotion of "whole-person-health" will note the beginning of emotional difficulties, and through work with his patient and knowledge of the environmental milieu, can frequently take the necessary "stitch in time." When the problems require specialized help, he can make the necessary referrals, if through his own efforts in community organization and leadership, he has provided himself with the necessary contacts and resources. Psychiatric and other medical specialists, various kinds and levels of psychiatric facilities, social and civic agencies all stand ready to play appropriate roles on the periphery of the mental health circle; the family physician is the core of the circle, and his the executive role.

Such a burden of responsibility may seem cruel at first glance, whereas properly managed it can lighten the general physician's work, particularly those aspects which are immeasurably frustrating and discouraging. For the recurrent neurotic, hypochondriacal, psychosomatic, or otherwise emotionally ill patient there can be help which is remedial, rather than merely temporary or palliative. In an age of specialization when too many doctors are

forced into the role of technicians, the broader, community approach to medicine much more nearly approaches the original motivations of a physician. Devotion to productivity, interest in growth and development, almost childlike curiosity about the rhythms and needs of life, ease in identifying with other human beings are some of the priceless qualities that make a doctor—and also a community leader. Fifty years ago, the “town doctor” was automatically healer and civic leader; the needs and trends of American life today seem to demand that he return (although in a more complex sense) to this time-honored role.

The thesis of “Back to the Community” is merely that, failing adequate manpower and facilities to deal with our national mental health crisis through habitual meth-

ods, we can make use of the resources available, within our communities and within ourselves. More hospitals, more money, and more psychiatrists we most clearly need. While we acquire these, the most adaptive approach lies not in deepening the old, socially neurotic channels of adjustment, but in realigning our medical defenses in a way that better fits the needs of our patients. Early treatment, preservation of the patient's resources, reassertion of our own human abilities as doctors in short, decentralization of the mental health program combined with old-fashioned medical “horse sense”—will not only function as means of interim control, but will reduce the total quantity of hospitals, money, and psychiatric specialists we must ultimately acquire.

F. G. E.

ETHICS BORN OF EXPERIENCE

As man advanced in intellectual power, and was enabled to trace the more remote consequences of his actions, as he acquired sufficient knowledge to reject baneful customs and superstitions; as he regarded more and more, not only the welfare, but the happiness of his fellowmen; as from habit, following beneficial experience, his sympathies become more tender and widely diffused, extending to men of all races, and finally to the lower animals, so would the standard of his morality rise higher and higher.

Looking to future generations, there is no cause to fear that the social instincts will grow weaker, and we may expect that virtuous habits will grow stronger. The struggle between our higher and lower impulses will be less severe, and virtue will be triumphant.

—CHARLES DARWIN

CORRESPONDENCE

CORRESPONDENCE

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : All of us who are members and fellows of the American Psychiatric Association are properly concerned with the Scientific quality of the *American Journal of Psychiatry*. Accordingly, I thought it might be of value to call your attention to an unfortunate implication of the comment by Dr. Werner Tuteur in the September, 1959, issue, entitled "Statistics and Statisticians : A Timely Warning." Dr. Tuteur makes a point that undue inferences should not be drawn from statistical data. One might think of stronger illustrations than the three he uses to make this point, but I'm sure he would find agreement with his main thesis on the part of both statisticians and non-statisticians.

It seems to me that it is at this latter point mainly, that statisticians would agree with him, that Dr. Tuteur makes his most unfortunate inference. It is one thing to make a point that statistics may be misused, but another to attribute these, for the most part, to statisticians. (For example, Dr. Tuteur says that it is well to remember "some examples of basic fallacies inherent in statistics and statisticians." (Nothing which he says further in his article indicates that the misuse of statistics was done by statisticians.)

It has been my experience that Dr. Tuteur errs in two respects. First of all, I

have found statisticians to be among the most cautious people in the interpretation of statistical inferences. I am sure they also draw some unwarranted inferences, but they are less apt to do this than the person who is not a statistician.

Secondly, I believe that Dr. Tuteur is too narrow in his approach to what comprises the field of the statistician. He writes as if the statistician were one who dealt merely with the manipulation of figures, and then principally in ex-post facto approach. Actually, the statistician is very much concerned with research, design, problems of sampling, uncontrolled variables, accuracy of the data corrected, etc. We physicians often make a considerable error in not consulting a statistician until the experiment has been concluded. This overlooks the value, and sometimes the main value, of the statistician in setting up research design.

For these reasons, I think it is important to call your attention to the fact that in implicating the unwarranted conclusions which may be drawn from a misuse of statistics, Dr. Tuteur has unfortunately, and inaccurately, "warned" us about statisticians, as well.

Myron G. Sandifer, Jr., M.D.,
Director of Research,
North Carolina Hospitals Board
of Control,
Raleigh, N. C.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : In choosing the title "Statistics and Statisticians," I was merely guided by the linguistic concept that the two words represent two halves of a unit similar to "Alcohol and Alcoholics," or "Farms and Farmers," etc. The alliterative effect of the two words also played a part. At no time did I intend to write a polemic treatise against the profession of statisticians. The over-all motivation for writing the paper was its

closing quotation, which says that "it is doubtful that gets you an education." A better title might have been : "Some Pitfalls and Fallacies inherent in Statistics." As Dr. Sandifer points out, apart from the unfortunate phrase "inherent in statistics and statisticians," nothing I have said indicates the misuse of statistics by (professional) statisticians. My concept was that a person using statistics, linguistically, *is* a statistician.

Werner Tuteur, M.D.,
Elgin, Ill.

NEWS AND NOTES

FUNDS FOR RESEARCH IN PSYCHIATRY AVAILABLE.—The Foundations' Fund for Research in Psychiatry announces the availability of funds for the establishment of 4 or 5 permanent, full-time research positions (associate or full professor level) for research psychiatrists in departments of psychiatry in medical schools. The closing date for applications is July 1, 1960. For further information, write to the Foundations' Fund for Research in Psychiatry, 251 Edwards St., New Haven 11, Conn.

MENTAL HEALTH RESEARCH INSTITUTE, UNIVERSITY OF MICHIGAN.—The dedication ceremonies of the Mental Health Research Institute Building of the University of Michigan, Ann Arbor, were held on January 29, 1960.

The all-day program included an open house in the new building, luncheon addresses by Dr. William N. Hubbard, Jr., Dean of the Medical School and Dr. Ralph W. Gerard, Director of Laboratories, Mental Health Research Institute. At the afternoon session of scientific papers, Dr. Jacob Marschak, Yale University, Dr. Anatol Rapoport and Dr. James G. Miller of the University of Michigan spoke.

LYNCHBURG (VA.) TRAINING SCHOOL AND HOSPITAL, LECTURE SERIES.—Between February and October 1960 a series of lectures, demonstrations, conferences in the fields of psychiatry, neurology, mental deficiency, nursing, psychology and social work will be held at the Lynchburg institution, in which eminent speakers from various centers will participate.

Dates of the meetings and other particulars may be obtained from Mrs. Constance P. Rudd, Director Public Relations, Lynchburg Training School and Hospital, Colony, Va.

THE WORLD MEDICAL ASSOCIATION 14TH GENERAL ASSEMBLY.—The German Medical Association, host of the 14th General Assembly of The W. M. A., scheduled to con-

vene in West Berlin, September 15-22, 1960 extends a cordial invitation to all the doctors of the world to attend this outstanding meeting.

The *Bundesärztekammer* (German Medical Association) will convene its 1960 annual meeting concurrently with the convening of the General Assembly. The two associations will meet jointly in their opening and closing plenary sessions.

Additional information including programs and schedules will be available on or about March 1 at The World Medical Association, 10 Columbus Circle, New York 19, N. Y.

INTERNATIONAL UNION OF FAMILY ORGANIZATIONS.—The Union will hold an international conference on the family in conjunction with the annual meeting of the National Council on Family Relations at Teachers College, Columbia University, New York City, August 23-28, 1960. Eleven member organizations of the IUFO in the United States will sponsor the conference. The theme will be Personal Maturity and Family Security. There will be plenary sessions and section meetings, including speakers from various parts of the world, and involving translations into the major languages. The sectional meetings, followed by discussion groups, will be on Early Child Development; Family Life Education in the Schools, in the Colleges, in the Community; Parent Education; Religion; Counseling; Research; and Economic Aspects of Family Security.

For information concerning registration, write: Mrs. V. W. Jewson, 1219 University Ave., S. E., Minneapolis 14, Minn.

PHILADELPHIA DRUG EXCHANGE ANNUAL DINNER MEETING.—Dr. Robert Felix, director of the National Institute of Mental Health and president-elect of the American Psychiatric Association, was the principal speaker at the annual dinner of the Philadelphia Drug Exchange on January 27. Dr. Felix's topic: "The dynamic role played by drugs in combating mental illness."

The dinner was held at the Bellevue Stratford Hotel, and honored Francis Boyer, board chairman of Smith, Kline & French Laboratories. Mr. Boyer received the Exchange's highest award, the Proctor Medal, for his "leadership in the fields of mental health, medical education and pharmaceutical research."

DR. EDWARD WEISS.—The death of Dr. Weiss, Professor of Clinical Medicine in Temple University Medical School, Philadelphia occurred January 13, 1960. He had suffered a heart attack. His age was 64.

Dr. Weiss had long specialized in psychosomatic medicine and had been president of the American Psychosomatic Society of which he was one of the founders. His book *Psychomatic Medicine*, co-authored with O. Spurgeon English, also of Temple University, is widely known. It has gone through several editions and been translated in other languages.

Dr. Weiss, a native of Philadelphia, graduated from the University of Pennsylvania and Jefferson Medical College. He had served on the staffs of both the Philadelphia General Hospital and Jefferson Hospital, and came to Temple University as clinical professor in 1932. He was also director of psychosomatic research in the National Association for Mental Health.

WORLD MENTAL HEALTH YEAR.—Lewis B. Cullman, National Chairman of the World

Federation for Mental Health, United States Committee, Inc., reports that Dr. Frank Fremont-Smith, Co-chairman for the International Committee of World Mental Health Year left for Moscow January 26 at the invitation of Professor P. K. Anokhin, Director of the Institute of Physiology in Moscow, and will endeavor to further the participation of the U.S.S.R. in World Mental Health Year by becoming a member in this world effort for better mental health and human relations.

From Moscow, Dr. Fremont-Smith will go to London for the meeting of the Executive Board of the World Federation for Mental Health of which he is past president.

NORTH PACIFIC SOCIETY OF NEUROLOGY AND PSYCHIATRY.—Dr. Thomas H. Holmes, Secretary-Treasurer, announces that the North Pacific Society in conjunction with the Northwest District Branch of the American Psychiatric Association will hold its annual scientific meeting at the Benjamin Franklin Hotel, in Seattle, Wash., on April 8 and 9, 1960.

Guest speakers will be Dr. Douglas D. Bond, Professor and Chairman of the Department of Psychiatry at Western Reserve School of Medicine, Cleveland, Ohio, and Dr. Horace McGoon, Professor and Head of the Department of Anatomy at the University of California, Los Angeles.

SCIENTIFIC OBSERVATION

Put off your imagination as you take off your overcoat when you enter the laboratory ; but put it on again, as you do the overcoat, when you leave the laboratory. Before the experiment and between whiles let your imagination wrap you around ; put it right away from yourself during the experiment itself, lest it hinder your observing power.

—CLAUDE BERNARD

OFFICIAL REPORTS

EXPLANATORY NOTE

WALTER H. OBENAUF, M.D.

Comments have reached me to the effect that the article, "The District Branch of the APA: Its Origin, Present Status, and Future Development," published in the November, 1959, Journal, was incomplete, with respect to certain historical aspects, and subject to misinterpretation concerning my beliefs about the future relationship between the Assembly and the Council.

As pointed out in the article, it was the explosive increase of the membership which was (and continues to be) the moving force which led to the establishment of the Assembly of District Branches, and to the growth of the District Branches. The work of the Reorganization Committee, although its proposals were not adopted by the membership, was nevertheless one of the stimuli (in my judgment), from which our Assembly has developed. As the Assembly gains experience and status, I believe that it will become even more important in the *development of policy* for the Association. Through the District Branch, each and every Association member may participate in the business of the Association. Thus the Assembly, as more and more members become involved in District Branch affairs, will come more and more to reflect the wishes and opinions of the membership at large. This, I had been led to believe, was the *intent* of the plan offered by the Reorganization Committee, and that is what I had in mind when I wrote: "there seems to be no doubt that in time the original plan of the Reorganization Committee headed by Dr. Karl Menninger will, to all intents and purposes, be fulfilled."

Every organization requires an executive body, and I can see no advantage in, or likelihood of, the surrender of this function by our Council as now constituted. The relationship between the Assembly and its officers and the members of Council has been most cordial to date, and there is every reason to believe that this relation-

ship will continue. As a matter of fact, the District Branches through the Assembly have, in the recent past, provided valuable experience for some members of Council and officers of the Association. The importance of this function cannot, in my judgment, be overemphasized, and I believe that it is likely to continue and to increase—to the great advantage of the Association. Thus, relationships between the Assembly and the Council should tend to cement ever more firmly as time goes on.

Credit for the historical development of the Assembly belongs to many, but one or two individuals deserve special mention. Past President D. Ewen Cameron, was one whose vision and parliamentary skill resulted in the adoption of the amendment to the By-Laws, which established the Assembly in 1952, and it was during his Presidency that the first Assembly was convened at Los Angeles in 1953. Indeed, when the deliberations of the first day of that year resulted only in the election of the first officers, and little other meaningful action (because of doubts concerning authority), it was his urging that caused the Assembly to meet again on the second day and take a definite stand on important current issues. Another officer who deserves special mention is Mr. Austin Davies, who, in his role as Business Executive for the Association for the past 28 years, has worked with the many Association officers and others through all that time in the development of our organizational structure. He has believed in, and, along with others, actively promoted the idea of the District Branch. However, as he himself states, there was little response to such efforts until Doctor Cameron fathered the amendment to the By-Laws that led to the creation of the Assembly.

As I stated in the original article, it has been my hope that it might act to stimulate thought and discussion concerning the

future course of our Association. Even though evidence to date suggests that this occurs largely because of omissions, rather

than because of the substance of the article, I continue to hope that my efforts may not have been entirely in vain.

FREEDOM

Liberty lies in the hearts of men and women ; when it dies there, no constitution, no law, no court can save it ; no constitution, no law, no court can even do much to help it. While it lies there it needs no constitution, no law, no court to save it. And what is this liberty which must lie in the hearts of men and women? It is not the ruthless, the unbridled will ; it is not freedom to do as one likes. That is the denial of liberty, and leads straight to its overthrow. A society in which men recognize no check upon their freedom soon becomes a society where freedom is the possession of only a savage few ; as we have learned to our sorrow.

—LEARNED HAND

("The Spirit of Liberty" address in "I am an American Day" ceremony in Central Park, New York City, May 21, 1944).

BOOK REVIEWS

SCHIZOPHRENIA: A REVIEW OF THE SYNDROME. Edited by *Leopold Bellak, M.D.*, and *Paul K. Benedict, M.D.* (New York: Logos Press, 1958. \$14.75.)

This book reviews the literature on schizophrenia—approximately 4,000 references—of the period 1946-1956 and is intended as a companion piece to Bellak's *Dementia Praecox* which covered the years 1936-1946. The editors were assisted in this enormous task by a group of distinguished colleagues contributing chapters in the areas of their special interest and competence, and the principal editor himself contributed 3 chapters. He states in his foreword that the book is not intended to be particularly critical but rather to place the available data before the reader leaving selective judgement to the latter.

The book has many merits. First, it should be of great value as a type of index and source of individual references. The coverage in most areas is very comprehensive. A further value is the provision of perspective in breadth and through time of the myriad aspects of cause, manifestations and treatment of schizophrenia which have been observed and reported upon by thousands of investigators. Such a perspective, besides bringing a welcome measure of order and coherency to a field of scientific literature which sometimes verges on the chaotic, also should be a useful antidote to the all-too-frequent dramatic claims of discovery of single causes and cures of schizophrenia.

The overview obtained from reading this survey is in some ways disheartening. Repeatedly one gains the impression of investigators seemingly working in relative isolation, with little true communication with each other or building upon and integrating with the work of others. This is not just between the somatic and the psychological camps but also within each of these and other groups. In short, the picture is of an extremely disarticulated scientific community. Several of the authors comment upon the impossibility of comparing reports from investigators who operate in different conceptual frames of reference and with a nosology which permits an obfuscating heterogeneity of patients diagnosed as schizophrenic. It appears that schizophrenia as a concept suffers from many features of schizophrenic thought disorder such as over-inclusion, overconcreteness, faulty abstraction,

and interpenetration. The lack of clarity in our conceptual framework and nosology, as well as absence of uniform and reliable tools for measurement of degrees of illness and improvement, appear as major stumbling blocks in the path of serious scientific investigation.

This leads to my major criticism of the book, namely the setting of a goal of a non-critical review. Although it would have added to the immensity of their task, by essaying a thoroughly critical work the authors also could have added greatly to the already considerable value of their book. In fact, the chapters in which the authors permit themselves critical comparisons and efforts to focus and synthesize are among the best. These include the chapters by Bellak and Blaustein, *Psychoanalytic Aspects of Schizophrenia*; Freeman, *Physiological Studies*; Benedict, *Socio-Cultural Factors*, and portions of the chapter by Ekstein and collaborators on childhood schizophrenia. I believe that most readers would have welcomed further such assistance in winnowing the wheat from the chaff of this enormously bulky literature.

For the most part, the book is well organized. There are a few areas of repetition and overlap which might have been eliminated. For example, the chapters on Vital Statistics and Socio-Cultural Factors overlap in their discussions of incidence rates. Sections of 4 other separate chapters—Etiology, Pathogenesis and Pathology; Diagnosis and Symptomatology; Complications and Sequelae; and Prognosis, also overlap and might usefully have been combined in part of whole.

One area which seemed slightly neglected and possibly deserving of a separate chapter was that of personal relationships, social interaction patterns and problems such as withdrawal and desocialization in schizophrenia. These received only brief mention in the chapter on psychological studies and a section on milieu therapy in the general psychotherapy and allied methods chapter.

The virtues of this book as a good reference source, in providing a useful overview of the tangled complexities of the subject, and in illuminating specific handicaps and weaknesses in our over-all investigatory effort make it a valuable work indeed.

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HAVELLOCK ELLIS, ARTIST OF LIFE. By John Stewart Collis. (New York: William Sloane Associates, 1959, pp. 221. \$4.00.)

The author of this book was a personal friend of Havelock Ellis. At the latter's request he had written the Introduction to his *Selected Essays* for the Everyman Library. It is well therefore that he has here set down his own impressions of one of the world's great thinkers and men of letters. His book is not a biography in the ordinary sense; he is content to have "brought out what is relevant and significant during the most creative years" of the life of Havelock Ellis. For continuity of the life story he depends heavily upon Ellis' autobiography, *My Life*, from which he freely quotes. But the interest is less in the outward events and more in the natural history of a mind.

Mr. Collis' book appropriately commemorates the centenary of H. E.'s birth in 1859.

The author has a good deal to say about *My Life*. He does not consider it a work of art or find all parts equally inspired. But "after page 30 I do not feel like skipping a word for some 200 pages." Later, "To a certain extent only, the work becomes bogged down by his wife." H. E. wanted to paint "a full portrait of himself and her, letters and all . . . to fully portray two human beings coming together, and to show how all . . . are much the same in essentials when facing death or danger or other levellers." *My Life* is probably as factual and uninhibited a record as it is possible for a scientist who sets out to tell the truth, the whole truth, and nothing but the truth, to compose. By mutual agreement H. E. and his wife lived apart much of the time, keeping two establishments. H. E. condoned his wife's passion for other women, and later in reminiscence would refer to "her dear friend of this period." By his tolerance he retained his wife's loyalty and affection and did not cease to return these sentiments.

The wide range of Havelock Ellis' studies is shown in the list of his works published between 1890 and 1951. Some titles: *The Criminal*, *The Nationalization of Health*, *A Study of British Genius*, *The Soul of Spain*, *The World of Dreams*, *The Problem of Race Degeneration*, *The Dance of Life*, *From Rousseau to Proust*, *The Genius of Europe*, *From Marlowe to Shaw*, *Sex and Marriage*.

He is of course best known by the seven volumes: *Studies in the Psychology of Sex*. Mr. Collis gives short summaries of the contents of these volumes.

Unfortunately the first of this series ready for publication was the volume *Sexual Inver-*

son, which was printed in England. A dealer was sued for selling "a certain lewd wicked bawdy scandalous and obscene libel." The book was not defended and the case was lost. The judge added his testimony. He addressed the book seller: "You might . . . perhaps have been gulled into the belief that some one might say that this is a scientific book. But it is impossible for anyone with a head on his shoulders to open the book without seeing that it is a pretence and a sham . . . this filthy publication." Thus spake the Law—which seems to justify the opinion of Mr. Bumble as recorded by Mr. Dickens. But Havelock Ellis could later comment: "My 'filthy' and 'worthless' and 'morbid' book has been translated into all the great living languages."

The other volumes in this series were published outside of England. The story of the lives of Havelock and Edith Ellis indicates some of the measures by which the marriage of two quite incompatible personalities can be made tolerable for a considerable period, although at the wife's instance they were ultimately legally separated.

H. E. had 23 years more of life—his happiest years Mr. Collis thinks, through association with the excellent Françoise Delisle who cooperated with the author in the preparation of his book.

C.B.F.

MAN AND CULTURE. Edited by Raymond Firth. (New York: Humanities Press, Inc., 1957, pp. 292. \$5.00.)

Bronislaw Malinowski (1884-1942) made such fundamental contributions to anthropological theory that they will go on stimulating students for generations to come. His works are among the most readable in a field that is characterized by brilliant writers, so that they will always remain a delight to read and a rich source of ideas to develop. The present volume is subtitled "An Evaluation of the Work of Bronislaw Malinowski," and it is the joint product of 12 of Malinowski's former students, each of whom has attained distinction in his own field of anthropology, and in one case in sociology. It may at once be said that this is by far the best volume that has thus far appeared on Malinowski, or is likely to appear, and it is highly recommended to all readers. The contributors and contributions are as follows: Raymond Firth: "Malinowski as Scientist and as Man"; Audrey I. Richards, "The Concept of Culture in Malinowski's Work"; Ralph Piddington, "Malinowski's Theory of Needs"; Talcott Parsons, "Malinowski and the Theory of Social Systems"; Phyllis Kaberry,

"Malinowski's Contribution to Field-Work Methods and the Writing of Ethnography"; J. R. Firth, "Ethnographic Analysis and Language with Reference to Malinowski's Views"; E. R. Leach, "The Epistemological Background to Malinowski's Empiricism"; I. Schapera, "Malinowski's Theories of Law"; Meyer Fortes, "Malinowski and the Study of Kinship"; S. F. Nadel, "Malinowski on Magic and Religion"; Raymond Firth, "The Place of Malinowski in the History of Economic Anthropology"; Lucy Mair, "Malinowski and the Study of Social Change"; H. Ian Hogbin, "Anthropology as Public Service and Malinowski's Contribution to It." There is a complete bibliography of Malinowski's writings, a bibliography of works about Malinowski and his writings, and other works cited in the text. The profits from this volume will appropriately go to the support of an annual lectureship in memory of Malinowski, which is administered by Professor Raymond Firth at the London School of Economics where Malinowski taught from 1913 to 1941.

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YOUNG MAN LUTHER: A STUDY IN PSYCHO-ANALYSIS AND HISTORY. By Erik H. Erikson.
(New York: W. W. Norton & Co. \$4.50.)

At first blush analytical studies of the dead may not seem quite "cricket." The deceased—whether Moses, or Luther, or King Oedipus himself are in a difficult position to defend themselves. However, as long as there has been literary criticism, there has been analysis of a sort. The addition of modern clinical tools should merely add scope and incisiveness to an important area in the study of man.

Dr. Erik H. Erikson is the eminent psychoanalyst and Freudian scholar who gave the Yale Centennial address on Freud. It is the author's contention that both Luther and Freud had many similar problems: the same intellectual loneliness, the same breakthrough from neuroticism to creativity, the same central problem of a father complex. "The Luder (Luther) family . . . offered an extreme degree of moralistic paternalism and a minimum degree of that compensatory free-for-all of small and highly satisfying delinquencies which farmyard, street, or park can provide for lucky children . . . an ideal breeding ground for the most pervasive form of the Oedipus Complex . . ." Since this book is a psychoanalytic study, other aspects of Luther are touched upon. Thus we have Luther with a highly probably primal scene, Luther with the familiar syndrome of

suspiciousness, obsessional scrupulousness, moralism and a preoccupation with birth and death thoughts. Luther's father was a coal miner. Furthermore we are presented with Luther the manic-depressive who in his later years had profound bouts of depression. However, the outstanding symptom is an ever increasing rebelliousness—first against his father, then against the Church. The author makes the sage observation that Lutheranism became a man's religion, "wherever Luther's influence was felt, the Mother of God was dethroned."

The author of this book is a salutation man: a sudden emergence man. The words "life crisis" or "second birth" are frequently found and refer to a more or less sudden reorganization of the personality under stress. This is in contrast to the older, static concept of personality as a depository of earlier selves. As the author puts it, "Man is not organized like an archeological mound, in layers."

Probably most of the criticism of this book will come from the historians most of whom will reject his Great Man theory of history. For there are two schools of thought, Carlisle's Great Hero theory according to which history is viewed as a series of shadows cast by Great Men, and the sociological school wherein the great man functions something like a percussion cap touching off social forces which have long been gathering tension. The author obviously belongs to the discredited Great Man school, ". . . the young monk (Luther) interests me particularly as a young man in the process of becoming a great one," p. 36. There are many other instances. Critics have asserted that the Roman Catholic Church is the "spook of the Roman Empire" preserving its language, its dress, and something of its military organization. According to this theory the present Pontiff would be in a continuous line from Caesar Augustus. Most historians would regard Luther as the detonating device which set off explosive forces long gathering, rending Europe asunder with a Protestant north and a Catholic south, the cleavage lines for some odd reason following closely the boundaries of the ancient Empire.

Early psychoanalysis has been accused of "explaining away" the various types of religious experience as regressive phenomena. Dr. Erikson's approach is more sophisticated and brings in existential concepts. With Kierkegaard, he emphasizes the pitfalls of existence, especially as a venture in human freedom. He speaks of metaphysical anxiety, of "ego chills." Analogous to a sound barrier, the young theologian is portrayed as advancing by a series of

breakthroughs to new levels of existence. At the same time this work is liberally sprinkled with fascinating glimpses of Luther; Luther the theologian, the man of courage, the peasant firmly rooted in the soil.

The author has a thoughtful, learned and seminal mind and the reader will soon discover that this book is packed with much thought provoking and novel speculation.

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STUTTERING—A Symposium. Edited by Jon Eisonson. (New York: Harper & Bros., pp. 402. \$6.00.)

Only too often one still hears in the medical profession that "stuttered speech is but the symptom of an underlying neurosis and that removal of the neurosis will somehow automatically remove the speech difficulty. This somewhat naive notion has unquestionably been to the detriment of the advancement of both theory and practice with regard to this complex syndrome called stuttering. To the psychiatrist who is seriously interested in this problem area and wishes to broaden his outlook from that of the orthodox psychoanalytic view, this volume is highly recommended.

The introduction by Wendell Johnson carries a message in itself making a "semantogenic" approach to the problem. Johnson says "the reader may venture into the pages ahead with an assurance of finding, in varying proportions, both stimulation and contentment." This is certainly true. There are 6 contributors who each present a somewhat different facet of the problem, but by no means mutually exclusive points of view. Indeed what Sheehan, one of the contributors says, is applicable to almost the whole volume; "A blend of several approaches—of psychoanalytic and learning theories with modern personality theories."

Glauber's contribution presents little that is not orthodox, with much psychoanalytic theory and little in the way of conclusion. With this exception, however, the remaining contributors agree, to a large extent, if not in theory then certainly in practice. In a truncated review it would be difficult to spell out each contributor's point of view. The volume presents very well an attempt at integration and provides the clinician with many practical suggestions for

attacking the problem realistically. Bloodstein, Sheehan and Eisonson all present systematic theories and practical therapeutic procedures with a consistent rationale. Indeed it is interesting to note that, although we may differ somewhat in theory of etiology, we differ but little in clinical practice. West's refreshing, if not sobering, contribution "An Agnostic Speculates about Stuttering" is provocative in putting forward his "ictocongenital" hypothesis. Most experienced clinicians have had reason to speculate about the possibility of the convulsive nature of the disturbance in at least some types of stutterers. Van Riper's section "Experiments in Stuttering Therapy" is in rather vivid contrast to the other perhaps more "dignified" sections. Van Riper is having fun but this should not detract the reader from much valuable data that is contained in this section. It is material straight from the clinic files giving an account of experimental therapeutic procedures over a period of 10 years. It rings true. It portrays the man as well as the therapy, and is a lesson in clinical flexibility and objectivity.

Altogether the publication is a most worthy one and is certainly to be recommended to psychiatric practitioners. Nearly every section contains a comprehensive bibliography and it is encouraging to note, in these days when so many volumes are appearing under editorship, that a share of the royalties from the sale of this book has been assigned to an organisational cause.

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REPORTS, VOLUME 3, GROUP FOR THE ADVANCEMENT OF PSYCHIATRY. (New York: Publications Office, 104 E 25th Street, 1959, pp. 618. \$8.00.)

This volume contains 12 reports published from June, 1956 to May, 1959 and including discussions of the psychopath in mental health, mental health education, susceptibility to forceful indoctrination, methods of forceful indoctrination, epileptics at work, school desegregation, diagnosis in child psychiatry, leisure-time activities, group teaching for medical students, religion and psychiatry, adaptation to new situations, controls in psychiatric research.

A.G.



ALBERT WARREN STEARNS

IN MEMORIAM

ALBERT WARREN STEARNS

1885-1959

Dr. Stearns, son of George Edwin and Helen Maria (Proctor) Stearns, was born in Billerica, Mass. on January 26, 1885. He attended Tufts College and graduated from Tufts Medical School in 1910. He showed keen interest in the specialties of medicine which needed physicians the most—psychiatry and neurology. He became one of the pioneers, especially in the field of psychiatry. His formal training in psychiatry began when he became a resident physician at Danvers State Hospital in 1911. At the end of the year he resigned to go to Boston State Hospital where he worked with Dr. Southard until the end of 1913 when he went into the practice of neurology and psychiatry.

Dr. Stearns' marriage to Frances Matsell Judkins on December 28, 1912 was blessed with two sons in the ensuing years. The untimely death of one of his sons, Albert Warren, Jr., on the threshold of a promising career in medicine, brought personal sorrow and grief, but not defeat. It heightened his understanding and responsiveness to human suffering and needs and increased his personal application of his potentials to greater capacity to alleviate illness and disease. His other son, Charles Edward, who is married and has four children, is the dean of Tufts College of Liberal Arts.

Dr. Stearns was consultant to U. S. Naval Hospital, Chelsea, Mass. from 1923 to 1929. He became professor of psychiatry and the dean of Tufts College Medical School from 1927 to 1945. During the years 1929 to 1933 he was the Commissioner of the Department of Correction of Massachusetts. He was associate commissioner of the Department of Mental Diseases of Massachusetts from 1935 to 1938. Dr. Stearns was chief of neurology service at the Boston Dispensary from 1921 to 1945. In 1943 Dr. Stearns was honored by Tufts College with an honorary degree of Doctor of Science. In 1945 he became professor of

sociology and remained as the chairman of this department until 1955.

Dr. Stearns served in the Medical Corps of the U. S. Navy in both World Wars. In the first one he served as a first lieutenant from 1917 to 1919. In the second war he served as a captain.

Dr. Stearns was a member and officer of many local, state and national medical and psychiatric organizations. He was a Life Fellow of the American Psychiatric Association, and member of A.M.A. In 1931 he was president of Boston Psychiatric Society. In 1934 he was president of Boston Society of Psychiatry and Neurology. From 1938 to 1940 he was Vice-President of Massachusetts Medical Society. He was a member of the American Academy of Arts and Sciences.

Dr. Stearns was the author of the book *Personality of Criminals*, published in 1932 and many other publications, such as *Sexual Crime*; *The Life and Crimes of Jesse Harding Pomeroy*; *Cases of Probable Suicide in Young Persons*; *One Thousand Unsuccessful Careers* (jointly with A. D. Ullman).

Dr. Southard described Dr. Stearns as his cavalry officer who rode ahead and flushed out the enemy, described the configuration of the forces and rode on to the next undertaking.

His professional life was marked by a steady progression of successes, honors, recognitions in his chosen endeavors. Perhaps, none was more treasured than the annual dinner given him by his students. It has been said: The great use of life is to spend it for something that outlasts it—through his students his influence will live for generations. He called himself an "anti-quarian" and evidenced a keen interest in the old houses and their early inhabitants and in the history and traditions of his native New England.

Dr. Stearns had a great many interests and hobbies. As horticulturist, he enjoyed

his garden, flowers and shrubs. He talked about his apiary and displayed keen knowledge of various species of birds and wild life. His deep interest in his Alma Mater—Tufts College and Medical School, was foremost. He enjoyed the annual “home coming.” One of his latest pictures was taken during class reunion with General and Mrs. Raymond W. Bliss on the campus of his Alma Mater in June 1959.

He appreciated certain values such as punctuality, thoroughness, truth, tolerance, attentiveness, decisiveness, discussions and freedom of verbal expression, especially by himself. He saw and expressed the better views on given topics. One exception was his minimal interest in the Freudian theory of the practice of psychiatry. He felt that it was oversold and that some psychiatrists with limited experience and training in it were practicing it.

He received many invitations from church groups, women's clubs, civic and professional organizations to give talks or to discuss psychiatric problems. He was called by the newspapers, courts, and judges to give an opinion on various psychiatric matters.

These included delinquencies, mental status of murderers, changes in psychiatric therapies and laws, and handling of criminals. He was a dynamic and interesting speaker.

Up to the time of his sudden and unexpected demise, Dr. Stearns was an active psychiatrist. He was a psychiatric consultant at the Bridgewater State Hospital for the Criminally Insane and at Boston State Hospital. He was adept in forensic psychiatry and courtroom procedure and a familiar figure in many noted cases. He was scheduled to testify in court on the day of his death, September 24, 1959. The “Sage of Billerica” passed on gently, mercifully and peacefully as he had lived.

My association with Dr. Stearns continued for nearly three decades—initially as one of his students.

His warmth and sincerity endeared him to his associates, and his professional knowledge, competence, and wide experience, commanded the respect and confidence of all who knew him. The passing of Dr. Stearns is a great loss to Massachusetts, to New England, and to the nation.

Peter B. Hagopian, M.D.

A LONG-TERM INVESTIGATION OF CHLORPROMAZINE

A Study of Constant and Inconstant Chlorpromazine Administration Over a Period of Six Years With a Discussion of the Evolution of Our Theoretical Thinking¹N. WILLIAM WINKELMAN, Jr., M.D.²

Six years ago we cautiously gave chlorpromazine for the first time. Our results were reported in one year (1), in 3 years (2), and now we feel it is time for another appraisal—an appraisal based on the study of 1,090 patients, but more specifically of 75 patients who have been taking chlorpromazine since the investigation was initiated 6 years ago.

This paper is a concise summary of what has been learned and particularly how our thinking has evolved during this 6 year experience. Many of the details reported in 1956 (2) will not be repeated. We divide our discussion into 3 areas: 1. Technique of treatment, 2. Results of treatment, and 3. Theory of treatment.

First, I will discuss the theory of treatment and then describe technique and results in terms of our present theoretical concepts. It has been our main thesis for the last 3 years that optimum results with the neuroleptic drugs can be achieved only by understanding the patient's personality structure. Accordingly, intelligent treatment must be individually determined, not only from the personality at the onset of treatment, but from an informed evaluation of the changes that are constantly taking place. We feel it is from an understanding of a patient's conflicts and the strength of opposing intra-psychic forces, and not merely his degree of motor agitation that, in the long run, will help the psychiatrist treat patients effectively. The need for understanding is further emphasized by the repeated observation that some

psychic conflicts do rather poorly when treated with these drugs. Alteration of dosage is necessary, sometimes from day to day, according to the state of both intrapsychic conflicts and the environment. Optimum therapy can be accomplished only when the patient is seen regularly and the dosage adjusted according to the state of the conflicts.

Our present conception of the psychologic action of chlorpromazine, that is, the action on psychological functions secondary to the actions on certain brain centers, we explain by using the concept of psychic energetics. Every psychic act is invested with psychic energy which is freely mobile and shifts from one psychic element to another. When this energy charges or cathects an unconscious instinctual drive, the drive presses for immediate discharge in affects and in motility. This characterizes unconscious or primary process activity. The ego may or may not be able to accept cathected contents of the unconscious that are pressing for discharge, such as fantasies, drives, wishes, sensations and feelings. Thus, conflicts develop. Handling of the conflict can be either by complete repression and a decaathesis of the instinctual drive or by acceptance of the drive by the ego as it becomes fully conscious. Each of these two methods of handling a conflict can be utilized and elaborated into a scientifically organized method of psychiatric treatment. Probing of the unconscious with acceptance of the drive, is accomplished by psychotherapy, and convulsive therapy is an example of suppressive therapy.

We feel that the phenothiazines can be utilized for either of these two basic methods of treatment. In the literature, for the most part, phenothiazine therapy means suppressive therapy and utilizes moderately

¹ Read at the 115th annual meeting of the American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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large or large doses with a rapid buildup to the optimum therapeutic dosage, which in suppressive therapy is much higher than the dosage used in the uncovering techniques. In general, the more active or the more unopposed the primary process activity is, no matter what the diagnostic entity is, the higher must be the dosage. In these patients, a large dose of drug or a large increment in the dosage appears to markedly decrease the cathexis attached to the unconscious drive. Ego functions are, without doubt, also affected at this dosage, but comparatively far less than the knocking out of the abnormal primary process activity with the result that symptomatology is markedly altered. Whenever there is a reduction in dosage below a point that is constantly varying according to the status of the ego-id conflict, the inhibition of the cathexis ceases, and symptomatology bursts forth. Accordingly, expert management of these clinical problems requires understanding of the primary process, its content and its forces, in addition to understanding the status of the ego and its defenses.

If it is clinically desirable to treat a patient by a technique of probing the unconscious with acceptance of the drive and development of insight, there is an entirely different approach. Although the use of the phenothiazines in this clinical area is controversial, we have felt unequivocally during the last several years that these compounds have their place in treating the psychoneuroses and certain chronic psychoses entities in which the primary process is kept in control but a struggle is always present. The emphasis in this kind of treatment is not on the drug but on the active therapeutic process and the relationship between the physician and the patient. Here the problem of dosage, however, is more important, more sensitively determined and mild to moderate dosages are utilized. Theoretically, a chemical compound to be beneficial should facilitate the process of making unconscious material conscious. We feel that mild to moderate dosages of chlorpromazine produce an alteration of psychic energy and its distribution, which in turn affects many aspects of intra-psychic dynamics. There is alteration in the energy directed into the various

psychic-structural components which can be studied by very careful observation. When the carefully determined optimum therapeutic dose is achieved, the following changes may occur which we repeatedly observed in studying patients for 3 hours per week over 3 years (3, 4, 5) with alternating drug and non-drug months. There is lessening of primary process drives. There is lessening of super ego strength. There is minimal diminution of ego functioning. There results from these changes a relative increase in ego strength. Defenses need be less strongly cathected. However, since the energy of the instinctual need is reduced, the defenses are relatively stronger. With unimpairment of the ego, there is improved reality testing. There also results an unusual emotion, indifference to painful internal and external stimuli. There appears to be a decrease in symbolizing ability with a lessening of displacement, so people are seen more realistically. Owing to this and the increase in ego strength, "acting out" is markedly reduced. Interpersonal relationships are much improved.

In the actual technique of treatment, initial dosage depends on whether a suppressive or uncovering technique of treatment is to be used. In the former, a large initial dosage is justified, and the dosage quickly increased until the optimum therapeutic dose is reached—the gradually determined amount of drug which produces the most effective clinical result beyond which increases will produce no further improvement and undesirable reactions may prove troublesome. Maintenance dosages also must be large enough to keep the id impulses under control, but it appears that once the ego has experienced a mastery of the situation, it can continue this new role with somewhat less pharmacologic help. Accordingly, after a few months of the optimum therapeutic doses, a somewhat similar maintenance may be used.

Since its exact effectiveness cannot be accurately predicted except by a careful study of the primary process—secondary process balance, chlorpromazine must be initiated on a 6-8 week trial basis in the neuroses and at least 3-4 month time in the psychoses. When the decision to use the

drug has been made, it must be used in an optimum manner. As is true with insulin in diabetes, and the anti-biotics in infection, an inadequate amount for the therapeutic problem at hand is essentially worthless. Chlorpromazine therapy ideally is far more sensitive and skilled a procedure than insulin is for the diabetic, anticonvulsives for the epileptic, or digitalis for the cardiac; for we are dealing with thousands of psychological variables. I cannot stress enough how carefully one must observe and try to understand his patient. For example, these drugs have some impairing effect on motility, a constructive effect in the hyperactive, and a destructive effect in the individual who uses activity as a defense against his passivity. In the patient with partial impotency or frigidity, these drugs may be very beneficial on one hand or exaggerate the condition markedly, depending on the underlying dynamics. Because of the indifference, the environment can be seen as less harsh and extremely pleasant. On the other hand, if the sources of oral-dependent gratification have been and are diminished, the environment can appear exceedingly unpleasant. Patients with an abnormal preoccupation with the body image may become less concerned, or much more concerned. Effectiveness of these drugs is also influenced by the state of the transference, and *vice-versa*. The constant intrapsychic changes should be handled with sensitivity and understanding. Dosages must be raised when there is increased stress from either internal conflicts or from the environment. We feel more and more strongly that the entire treatment philosophy should be oriented towards an understanding of the status of the ego and adjusting the dosage accordingly. In the acute psychotic patient, we first use large doses to subdue the pathological id drives. In so doing, we hope that the ego will eventually be strong enough to take more control. In the psychoneurotic and chronic psychotic patient, we treat while carefully waiting the status of the ego, always endeavoring to strengthening that structure. We feel that these drugs have great value in the psychoneurotic patient when administered with knowledge and above all, understanding.

In discussing our results we will use few figures, feeling that the percentage figures that are filling the literature, are essentially meaningless. Our 1956 paper(2) is filled with percentages about each psychoneurotic reaction, each psychotic reaction, in children, and in the aged. We now believe that evaluation of each patient's reactions in terms of primary process-secondary process conflict and the nature of the defenses is necessary to predict results and to treat with optimum effectiveness. An ego that is totally defeated can not be helped. The more the ego is struggling the better the prognosis. Certain defenses such as denial and the use of conversion offer a poor prognosis.

Once having been established, optimum therapeutic results can be maintained at a high level. The therapeutic results in the 75 patients who have taken chlorpromazine for 6 years were excellent; nearly all remained symptom-free during the entire period. We realize that these 75 patients make up a selected population. Those who responded well to the compound were willing to remain on a drug for such a long time. Furthermore, nearly everyone who takes a medication is bound to skip once in a while, and if a patient takes a drug for 6 years, there is a suggestion that reducing or withdrawing it will bring on a return of symptoms, and upon experimental withdrawal there will result an abnormal number of relapses. This was found to be true. Of 20 patients whose drug was stopped for 2 weeks, $\frac{1}{2}$ showed at least a partial return of symptoms within 5 to 12 days.

Chlorpromazine in the treatment of the acute psychotic patient (the patient whose ego has been overthrown by the forces of the primary process but one that is still fighting) is a remarkably effective treatment. It is about equally effective as ECT and more effective than insulin coma therapy, although the exact degree of effectiveness between these forms of treatment cannot be compared very easily because of the differences in patient material, techniques and other influences from study to study.

In the chronic psychotic and psychoneurotic, when the ego is strong enough to give long term battle to the opposing forces,

the fact that psychotropic drugs are biologically active substances is a constant reminder that they are not to be used as a substitute for the psychosocial therapy which has been shown to help the psychotic patient in the process of achieving a new balance and a new orientation. (Other extradrug influences which help the strengthening ego, such as a good job, good friends, family, a pleasant and secure home environment, pleasant surroundings, and supporting social environment, all have added therapeutic value. We do not recommend drug treatment alone except when the patient is hospitalized. In the clinical state phenomena which will subside the overwhelming primary process, psychotherapy can begin and as time the ego can be strengthened.

No patient showed complaints after 45 months of treatment except mild constipation and gain in weight which reached a maximum and did not increase further. The blood counts and blood chemistry were normal throughout. Of the 1000 patients treated, there were 7 cases of clinical liver involvement all within the first 45 months of treatment. Cessation of the drug treatment brings on a return of original symptoms only in three quarters of the patients. We felt that the more successful the psychotherapy or living experiences during the drug treatment the less likely was there to be a return of symptoms. The more generally successful the treatment of a psychiatric patient, the more likely will the patient remain asymptomatic when the dosage of drug ultimately is decreased or stopped completely. We observed unequivocally that the patients who received only drug treatment also had a quick return of symptomatology upon drug withdrawal, whereas those in well-oriented long term psychotherapy either did not have a return of symptoms or only a partial return. Furthermore, they could go longer without the drug before any symptoms developed. We feel that the amount of drug needed to maintain the patient free of symptoms is an excellent indication of the degree of recovery from the abnormal intra-psychic process.

It is concluded that long term chlorpromazine therapy is an extremely valuable and sensitive treatment, not only in the un-

derstanding of the psychotic as a complex organism, but also in the approach to the treatment of the psychotic. The drug is most effective in the well-oriented, well-organized, well-structured, where it can be used as a constructive force furthering the psychotherapeutic process. With this understanding, many good results are seen. A good social living was combined with the drug (6). It is believed that in general the effectiveness of treatment is directly related to the orientation of the treating physician, how well he understands the patient, and how he applies this knowledge not only in the pharmacologic treatment but in the total treatment of his patients.

SUMMARY

1. The paper is a concise summary of what has been learned and how our thinking has evolved during a 6 year experience with chlorpromazine. It also reports the results of 75 patients who have been on the drug for 6 years. The discussion is divided into 3 areas: 1. Technique of treatment, 2. Results of treatment and 3. Theory of treatment.

2. Theory of treatment is discussed first. Our present concept of the psychobiological actions of chlorpromazine we explain by using the concept of psychic energetics. We feel it is from our understanding of the patient's conflicts and an understanding of the struggle of opposing forces and not merely evaluating the degree of his motor agitations that, in the long run, will help us treat him effectively. It has, therefore, been our main thesis that optimum therapeutic results can be achieved only by understanding of the patient's personality and by understanding how a drug can influence this structure.

3. All psychiatric treatment is divided into two categories: 1. Helping the patient suppress and repress painful conflicts, and 2. Helping the patient recall and relive the memory and emotions of the conflict with feeling and understanding and more successfully. It is pointed out that chlorpromazine can be utilized in either of these basic techniques, and each is described separately.

4. It summarizes how chlorpromazine affects intra-psychic activities and how, in turn, these can help the psychiatrist pre-

and medical and social interests. The utilization of treatment knowledge must be by the patient, and the desired improved management is measured with satisfaction, not with efficiency.

5. The treatment of all treatment is an open situation, and open treatment is followed by following the course of the age and doing everything to strengthen that course. The therapeutic attitude should be that of treating the illness and the treatment, and more of helping the management process of the patient and his age.

6. It is suggested that optimum change is caused not by those who are well treated in understanding the patient's psychodynamics, who have experience in the use of the concepts, and apply this minimal knowledge in treatment.

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THE FUNCTION OF PSYCHIATRY IN A MUNICIPAL LAW ENFORCEMENT AGENCY¹

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The present knowledge has found application in many areas of human relations in recent years. Psychological factors in the causation of crime are well established as well as the necessity that rehabilitation programs be planned in accordance with the present knowledge of effective therapeutic principles. There has been a corresponding increase in the use of trained professional personnel, psychiatrists and those in related fields, in staffing agencies and institutions involved in the management of those individuals whose behavior indicates psychological difficulties though falling short of overt mental illness.

Most progressive correctional systems not only employ psychiatrists and related personnel, both in their prisons and, more recently, in their parole divisions. Some probation departments utilize consultants. Certain courts employ, and others have available, consultants in psychiatry, not only to advise in regard to criminal responsibility, but also to assist in recommendations as to proper disposition according to the psychological problems involved.

Since medical emphasis quite properly has been prophylactically oriented when knowledge permits, it seems most curious that psychiatry has not been utilized more in the one area which might qualify as prophylactic rather than therapeutic in regard to crime, namely the local law enforcement agency. This is particularly curious in that it is this same agency which usually has first contact with adjustment problems due to mental illness as well. Yet in a current survey not yet completed, only a tiny percentage of some 90 cities large enough to support such a program employ or even avail themselves of consultation services of a psychiatrist.

Berkeley, California is a city of approx-

imately 115,000 with a police force of 170 full-time employees, a staffing ratio of 1.7 law enforcement officers per 1000 population. This is considerably below the norm for a community of this size or larger, many having nearly twice this ratio with the average being somewhere around 2 per 1000. The department is affiliated closely with the University of California, several members instructing in the School of Criminology. These factors plus the following unusual administrative structure predisposed to the present psychiatric orientation. Each patrolman has practically complete autonomy on his beat, investigating and disposing of cases personally, unlike the more common situation in larger communities where he would turn many of these problems over to specialists who would be responsible ultimately for disposition.

Since 1915, members of the force have been instructed in basic psychology and psychiatry as related to their duties. Since 1921, new candidates have been screened by a psychiatric consultant. Beginning in 1949 and continuing to the present, the Department has employed a psychiatrist on a $\frac{1}{2}$ time basis (10 hours per week) and extended the duties to include the following general categories. Actually these duties are highly variable, the psychiatrist being available as a "trouble shooter" in any situation which might conceivably involve psychiatric factors, but a review of the records of my predecessor and my personal experience allows a grouping roughly as follows:

1. Administrative.—This involves primarily the screening of prospective candidates for positions of patrolman and patrolwoman. This is considered to be a portion of the medical examination rather than a relative rating device and as such a candidate can be eliminated if, in the discretion of the psychiatrist, he shows indications of psychiatric disorder sufficient to interfere with the performance of his duties. In addition, a candidate could be eliminated arbitrarily for mere possession of personality traits

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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probably, even in the case of a trial before the government. This being especially so for juvenile and probably also for adult offenders, according to a recent study which indicates that an examination as to effectiveness of police candidates shows no better correlation with actual performance when done by psychology or psychiatric evaluation than when done by experienced law enforcement officers. In borderline cases, however, a qualified approval will result in special observation during the candidate's probationary period.

Due to the close working relationship between the psychiatrist and the rest of the team, it is felt inadvisable to select present members to a similar evaluation before promotional examinations. The psychiatrist is available for consultation in case of serious emotional problems involving present members, although this is an uncommon occurrence.

2. Liaison with other law enforcement and professional groups in the area. Overlapping responsibilities among community agencies are distributed through contact with the group involved, e.g., disposition of juvenile delinquents involving school, social work agency, police, district attorney, probation department, etc. Borderline cases involving medical problems are handled directly by the psychiatrist, e.g., those involving physicians or psychiatric patients in therapy under local physicians.

3. Medical and psychiatric consultant to the department.—Included here are evaluation of disturbed prisoners in jail and consultation with detectives as to disposition of problem cases, particularly possibly psychotic defendants and sex offenders. Since written reports are prepared on all interviews, this information becomes available to other agencies, e.g., the court and the district attorney's office, thus frequently avoiding the necessity for repeated examinations. Furthermore, the evaluation has the advantage of proximity to the offense, and is frequently much more accurate than those obtained later after the mental condition is modified by passage of time and possible secondary gain.

Cases are discussed with officers detailed to the juvenile bureau both as to disposition and follow-up if jurisdiction is maintained

within the department. A good portion of the work that is done with disturbed prisoners is done by officers previously trained for emergency situations, on duty late at night or on weekends, and in contact with the courts or on the basis of the officer's observation.

4. District attorney's consulting psychiatrist.—The district attorney's consulting psychiatrist is usually called by the president of the department. A consultation may be requested at any point, usually but not necessarily at the time of an interview. Some of these cases have been mentioned in this work as being referred to the court, either on referral to the district attorney, or referred to the district attorney by the court. The interview is conducted by the consulting psychiatrist, or by the psychiatrist in becoming acquainted with the case, or otherwise. He is not without supervision in the community.

The third and fourth general groups comprise the bulk of the time allotted. In addition to the general and specific psychiatric participation in the training program for new recruits and in-service training for older members. This involves a practically oriented course in the recognition and management of psychiatric emergencies and of the commoner potentially treatable mental illnesses. Some thought has been given to a more extensive course in human relations but practical time considerations pose a serious problem in planning such a program.

With the present emphasis on local community care of emotional problems, it is essential that the patient involved be exposed to psychiatric evaluation early in the course of his disorder. Probably the majority of disturbed juveniles and a good portion of disturbed adults are brought to the attention of the law enforcement agency long before the psychiatric problem is severe enough to indicate a purely medical disposition, and frequently long before the psychiatric problem is immediately apparent. In the absence of available psychiatric services, the only choice is to ignore the problem, to dispose of it through criminal channels, or at best, to refer it to a state medical facility which usually involves removal from the community.

It seems quite reasonable that early

recognition of these problems should be accomplished at the law enforcement level by professionally trained personnel. Although an available consultant might suffice as to the strictly diagnostic features, this arrangement is not entirely satisfactory in other regards. Aside from the convenience of regular duty hours, there is the subtle advantage in working relationships when the psychiatrist is a member of the "team" and overtly interested in proper law enforcement rather than outside impartial observer unaware of the special police problems involved. There is also the problem of the characteristic reluctance of department members to make special arrangements for psychiatric consultation. A salaried arrangement, however, sometimes results in consultation requests more or less in desperation in difficult cases even where the referring officer has little hope that the examination will uncover anything. Needless to say, the latter extreme is the more desirable of the two.

Based on relative population figures, there are at least 90 American cities which might similarly utilize at least part-time psychiatric services. In addition, smaller communities might well arrange for consultation as needed. Populous unincorporated areas

could arrange the same through the local sheriff's office. Some 20 communities might well afford full-time services and a few of the larger cities perhaps even more than one professional member, particularly where there is a full-time police academy.

The results of the present inquiry indicate that few communities have ever considered this possible use of psychiatry. As a result of the experience in Berkeley, serious consideration should be given to the institution of similar programs elsewhere. Very probably the initiation of such a program will have to come from some source other than the department itself, not because of resistance but rather simply lack of exposure to the possible advantages. Appropriate committees in local psychiatric and mental health societies might well be the proper instigating bodies. A combination program with the local health department or perhaps local mental hygiene clinic is another possibility.

In any event, a comprehensive community program of preventive psychiatry should not overlook a natural case finding and early treatment source. At the present time, there is probably no better source than the municipal law enforcement agency.

PSYCHIATROGENIC ILLNESS

A. H. CHAPMAN, M.D.¹

At the present time when psychiatric treatment is becoming more common, a psychiatrist from time to time sees patients whose problems, in retrospect, have been more complicated than ameliorated by psychiatric attention. This is not to deprecate either the widespread need for treatment of emotional problems or the advances made in psychiatry in recent years, but merely to point out that such advances have their hazards as well as their advantages.

In the same manner that the term iatrogenic refers to illnesses and syndromes precipitated or caused by medical attention, the term psychiatriogenic may be used to refer to difficulties precipitated or caused by psychiatric intervention. Very little attention has been paid in the medical literature to this problem. Psychiatrists in recent years have been eager to stress to their medical colleagues the importance of a psychiatric understanding of many medical problems; the occurrence of psychiatriogenic difficulties has received scant notice.

The existence of psychiatriogenic illness is readily admitted by many psychiatrists (1, 2, 3, 4) though it is not possible to estimate its frequency. Certainly it must occur in only a small number of persons who are brought to psychiatric attention, but it is frequent enough to merit some attention as a disturbing complication of the current expansion of psychiatric treatment.

Any discussion of psychiatriogenic problems must take into consideration that psychiatric illness is a much more fluid concept than physical illness. Emotional problems are, to a certain extent, universal since all human existence is a continuing process of adjustment to an interpersonal environment which is constantly changing. Normal people are those persons who are making these continual adjustments with a minimum of conflict and relatively few psychogenic symptoms. Psychiatriogenic illness

is often merely an exacerbation of previous personality problems which, however, would not have become incapacitating or significantly more distressing had psychiatric intervention not occurred.

It is well known that psychoses may be precipitated by psychiatric treatment (1, 2). It seems probable that such psychiatriogenic psychoses occur mainly in persons who originally had profound underlying emotional problems which were not previously apparent in their overt social functioning. The crucial question is whether or not the individual so afflicted would have lived out his life without a psychotic illness if the psychiatric attention had been withheld.

Much importance should be paid to the question of which patients should *not* be treated psychiatrically. It is felt that an important prerequisite to the eventual answering of this question is the clear definition of psychiatriogenic illness as a medical problem. Delineation of a problem is often made easier if a concise term is available to describe it, and for that purpose the term psychiatriogenic has been introduced here.

A telling commentary on this problem is found in the autobiography of the distinguished orchestra conductor, Bruno Walter, who in 1906 consulted Sigmund Freud regarding a hysterical paresis of his right hand (5). The problem was serious, for it incapacitated Walter professionally. He consulted Freud expecting that psychoanalysis would be the necessary treatment. Freud examined the afflicted hand carefully and interviewed Walter. To Bruno Walter's surprise Freud recommended that he take an immediate vacation and suggested Sicily. Walter followed the advice and in time his problem spontaneously cleared; he remained free of any further such symptoms for the rest of his life. We do not know how Freud reasoned in the matter, but it is possible that he felt extensive psychotherapy in this patient would be more prone to prolong the symptom than to cure it. Freud, the originator of systematic interview treatment,

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was aware of its limitations and hazards (6).

Various aspects of psychiatrogenic illness may be considered under the following categories of psychiatric treatment: (a) Interview treatment (psychotherapy), (b) electroshock treatment, (c) psychiatric hospital inpatient procedures and diagnostic techniques.

INTERVIEW TREATMENT

It is well recognized that interview treatment may precipitate psychotic episodes by disturbing the precarious emotional equilibrium of anxious, shy, schizoid persons. The fragile emotional defenses which allow many such persons to continue social and economic adjustment may be so badly disturbed by the exploration of childhood experiences or current interpersonal stresses that schizophrenic psychoses may be precipitated. Depressive psychotic episodes may also originate in this manner when painful past experiences or guilt-ridden interpersonal relationships are too abruptly explored in passive, insecure, dependent individuals. There have been no psychiatric studies, to my knowledge, dealing with the course and prognosis of such psychiatrogenic psychoses, but I have had the opportunity to study two patients in whom continuing psychoses of several years duration had been so precipitated. It seems clear that some such patients would not have become psychotic if psychiatric intervention had not occurred (2, 4), and they in all probability would have continued to adjust at their previous level of social and economic functioning for an indefinite time. A decision as to whether or not such a person should be treated psychiatrically should take into consideration his current level of functioning, his responsibilities, and his position in the family structure, and should weigh carefully the potential risks of such treatment against possible gains.

In many persons it is unwise to disturb existing psychoneurotic problems (1, 4). A mildly obsessive compulsive person, when deprived of the regimented harness of his rituals and systems, may develop severe anxiety attacks or depressive symptoms. The removal of a minor hysterical symptom may at times be followed by the develop-

ment of other hysterical symptoms which may be more distressing than the original difficulty. A severe personality problem or even a psychotic episode may be precipitated by the removal of a long standing psychosomatic symptom which had served an important function in the emotional economy of a patient (7, 8).

Attention must be paid at times to the possible unfortunate effects that psychotherapy may have upon interpersonal relationships in the patient's life. It is well known that personality change occurring in one member of a marital team during psychotherapy may make continuation of the marriage impossible. A woman with a need to control and dominate others may find it impossible to continue a marriage with a husband who has lost his passivity and has become assertive of his aggressive feelings as the result of psychotherapy. The effect of such possible changes upon children and other involved persons must often be weighed before psychotherapy is undertaken. It is commonly said that such problems can be worked out if the marital partner will also undertake psychiatric treatment to correct his or her personality problems; in practice, however, such treatment is often not accepted, or may be economically or technically infeasible. Other disruptions of family structures, or of vocational and social relationships, may also be precipitated by psychotherapy.

Another psychiatrogenic area is that of unresolved transference neuroses. Transference neurosis, involving a disturbed set of attitudes and feelings which the patient develops toward the psychiatrist, is a frequent aspect of some types of intensive psychotherapy. Most psychiatric literature blandly assumes that all such transference neuroses are eventually resolved in treatment, thus freeing the patient of previously unsolved emotional problems which were reenacted in the transference situation with the psychiatrist. In general this seems so, but most psychiatrists with long experience have had occasions to observe and study persons in whom transference neuroses had not been resolved at the time treatment ended, even though treatment lasted several years. Such persons may have persistent emotional and personality problems as

the result of the unresolved transference neurosis. The transference neurosis may have remained unresolved either by virtue of the severity of the patient's problems or the therapeutic limitations of the therapist. Too little attention has been paid in the psychiatric literature to the problem of unresolved transference neuroses. It is not sufficient to say that if the patient had persisted longer with treatment he might eventually have worked through his transference neurosis. It must be admitted that the limitations of psychotherapy, as we have it today, often allow the patient to depart from treatment with these problems yet unresolved. It is also clear that because of this type of problem there are patients whose difficulties have been made worse rather than better by the treatment process. This is not to be interpreted as a rejection of the usefulness of transference phenomena in treatment, but rather as a recognition that transference analysis has its psychiatriogenic hazards as well as its useful potentialities. It should be pointed out also that transfer psychoses occur(9), and from time to time may become long-term, crippling psychiatriogenic complications of interview treatment; however, they are much less common than transference neuroses.

These considerations emphasize that psychotherapy is not lightly to be undertaken on the premise that it can do no harm and may do some good. Rather, the possible psychiatriogenic complications of interview treatment emphasize that it is a procedure carefully to be weighed in terms not only of possible advantages to the patient but also of the hazards that may be encountered.

ELECTROSHOCK TREATMENT

The physical hazards of electroshock treatment have been considerably reduced in recent years by refinements of technique and the introduction of various relaxing and anesthetic agents. It has been rendered relatively safe and easily administered. Such developments have encouraged widespread use of ECT for a variety of psychiatric problems.

It has been well demonstrated that psychotic episodes may be precipitated by

electroshock therapy (10, 11, 12) and that such psychotic episodes are not always reversible. In schizoid persons who were not overtly suffering from schizophrenic psychosis ECT may precipitate severe psychotic episodes. If such persons are given electroshock therapy for mild or moderate depressive symptoms the treatment may precipitate a psychotic episode much more serious and crippling than the original depressive difficulty.

There is much evidence to indicate that ECT partially impairs the integrative functions of the ego, or at least diminishes the ego's finer capabilities, for a brief period (13). Some patients cannot tolerate such a disturbance of ego structure without the risk of serious emotional disintegration. The decision to give electroshock treatment should be carefully evaluated to avoid the occasional precipitation of such psychiatric illnesses.

PSYCHIATRIC HOSPITAL PROCEDURES AND DIAGNOSTIC TECHNIQUES

There is a widespread movement at the present time to establish psychiatric wards in general hospitals. Several hundred general hospitals in the United States, both private and governmental, now have such psychiatric units as a part of their general medical facilities; many more hospitals are contemplating the construction of similar units. These units are designed for relatively short term hospital care, and their location in general hospitals considerably removes the previous popular stigma of psychiatric inpatient treatment.

This movement is much to be commended, but introduces certain psychiatriogenic hazards. As a result of these easily available facilities, a larger group of persons is going to experience brief periods of psychiatric hospitalization. One risk, with which I have had recent experience, is that psychiatric hospitalization may become an attractive escape for dependent, frightened people who find the stresses and perplexities of daily life painful and difficult. Some of these persons could continue to make a social adjustment outside a hospital, but if psychiatrically hospitalized they may find this protective environment emotionally gratifying to such an extent

that they undergo repeated hospitalizations in psychiatric pavilions of general hospitals. Eventually, some are institutionalized for longer periods in the economically more feasible setting of state hospitals. Such an undesirable psychiatriogenic deterioration of the patient's condition is particularly likely to occur in severe phobic, dependent, or anxious persons, often with mild to moderate depressive overlays. Such persons are at times hospitalized upon the premise that such a procedure may possibly help them and cannot do harm. They may, however, develop psychiatriogenic exacerbations of their personality problems to such an extent that they become chronic psychiatric invalids either at home or in institutions. Such people could probably have continued to function socially and economically, though limited by their problems, had psychiatric hospitalization not been carried out.

Caution must be taken in selecting patients for such procedures as barbiturate interviews and hypnosis. Following the Second World War, there was much interest in the use of interviews carried out on patients partially narcotized with intravenous pentothal or amytal, for diagnostic and therapeutic purposes. Increased experience with these agents has indicated that psychotic illnesses may be precipitated by the ego-weakening properties of barbiturate interviews(14). Such potential hazards in hypnosis have similarly been known for a long time(15).

DISCUSSION

Each new field of medical therapy can profitably review the ancient medical axiom, "Primum non nocere," "First of all, do no harm." This injunction may be made to therapists in the field of interview treatment, which is largely a product of the twentieth century; as a widespread treatment method it is an innovation of the past 40 years. To ignore such warnings will at times lead to psychiatriogenic damage to patients. The development of psychotherapy is a significant forward step in medical progress, but there is urgent need for emphasis of its limitations and hazards as well as its potentialities.

We live in a time when pessimism is un-

fashionable among psychiatrists and unblemished optimism is viewed by many in the field as virtuous and enlightened. Such a point of view is common during the first flush of development and success in any new field, but mature consideration inevitably leads to a more cautious appraisal of the risks and limitations of the new therapeutic method. Consideration of the occasional psychiatriogenic hazards of psychiatric treatment will underline the need for critical re-evaluation of the methods, goals, and results of recent psychiatric progress.

A final word should be said about some of the unfortunate effects of the widespread publicity which is being given to psychiatry in the public press. Much of this publicity is viewed with apprehension and disapproval by psychiatrists, but it must be admitted that psychiatrists themselves have contributed to the dissemination of such data in their earnest desire to acquaint the public with progress in their field. The public is becoming increasingly aware that psychiatric illness is often considered to be caused by disturbed interpersonal relationships, sometimes dating back to childhood relationships with parents. This sometimes results in much painful guilt and distress in the parents of adult psychiatric patients. The parents and other relatives of such patients may become quite upset, even at times psychiatrically ill, in dealing with the feeling that they themselves may be responsible to a large extent for the illness and suffering of the patients. One has but to interview the parents of homosexual men to appreciate the self-questioning, agony and distress that such parents undergo for years after the discovery of the sexual difficulties of their sons. Regardless of the validity of such concepts on the etiology of psychiatric illness, and regardless of the possible general mental health advantages of the dissemination of such information, it must be recognized that the widespread acquaintance of the public with such concepts leads to suffering as well as benefit.

Much more restraint and judgment should be exercised in the exposure of the public to psychiatric concepts. The emotional disturbances and unhappiness caused

in the relatives of patients by widespread dissemination of psychiatric concepts may to a certain extent be considered a **psychiatrogenic complication of public education in psychiatry**. Public mental hygiene education is desirable and necessary, but should be carried out with discretion, tact, and literary good judgment.

SUMMARY

The term psychiatrogenic may be used in referring to problems and symptoms precipitated by psychiatric attention or treatment. Such difficulties may occur as the result of interview treatment, electroshock treatment or exposure of patients to psychiatric hospital procedure and diagnostic techniques. The current widespread increase of psychiatric treatment is to be commended, but the psychiatrogenic hazards that accompany it should be recognized.

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SENSORY DEPRIVATION AND PERSONALITY^{1, 2}

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In the 5 years since the pioneering work of Hebb and his associates(1, 2) there has been a growing number of studies of human isolation(3, 10). Despite the relatively mild restrictions imposed, there can be no doubt that marked changes in human functioning occur, and that these changes are noted under a variety of experimental and natural conditions. It would now seem the task of the investigator to study the significance of 3 sets of variables.

1. Experimental variables established by the structure of the situation; *e.g.*, types of sensation limitation used and whether these limit the total amount of sensation or merely de-pattern it.

2. Subject variables which are independent of the experiment such as the subject's personality, motivation, educational level, *etc.*

3. Variables due to the interaction between the experimenter and the subject such as the "psychological set" of the subject which may be determined by the instructions and attitude of the experimenter.

We will report on the relationship between ego-integrity and findings obtained after an 8-hour period of sensory deprivation produced by masking goggles (black-out or translucent), a masking noise to occlude ambient auditory stimuli, and arm restraints (mailing tubes and gloves). Our subjects were paid at the rate of \$1.25 per hour. They lay on a bed in a small room wearing comfortable street cloths. They were toileted as needed, but otherwise the experimenters did not enter the room or communicate with the subjects. Plantar and

chest electrodes were attached to record GSR and EKG. Before coming for their first interview, they had received a form briefly describing the experiment so that to some extent they all had the same information about it. Just prior to the start of the isolation session, subjects were directed:

... tell us, from time to time, about your mental processes, thoughts, images, day dreams, perceptions, feelings—just what it is like to be in this experiment. It is not expected that you will talk continuously."

The results here described are from 43⁵ subjects recruited through the student employment service of 2 local colleges. Subjects who had participated in other similar psychological experiments or who were students in this field were eliminated. They were primarily middle class males who had had other jobs from the employment service and expressed a need for money. They were run at a time when our experimental and interviewing techniques had been stabilized. Evaluations and diagnoses were based on an interview before the experiment, and a short autobiography. This initial interview was a structured exploration of the subject's motivations and expectations, his habitual forms of imagery, past history, present situation, family and other relationships, the stressful events of his life, and self-concept. Within each area the interview was conducted as an associative anamnesis. The interviewing and the analyses of the interviews were done by a psychiatrist in his fifth year of training. Immediately after the interview the subject was rated for overall ego-integrity based on (a) overt anxiety, (b) maturity of defenses, (c) health of object relations, and (d) current level of functioning in work. At this point a number of subjects were separated from the main experimental group on the basis of personality deviations. These are the 7 subjects re-

⁵ Ten of these were control subjects in social isolation alone who reported none of the effects described below.

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ported on in detail below. After the experiment another interview with each subject was conducted by the psychologist. This interview elicited reports of subjects' actual thoughts, feelings and experiences during the experiment, often providing supplementary and corroborative data to the initial interview.

At a later date, the typescripts of the 2 tape-recorded interviews and the autobiographies were reviewed and rated independently of the post-interview impression. These 2 sets of ratings rarely differed significantly and this difference did not affect the data.

We shall report on the relationship of ego-integrity of 3 types of experimental data.

1. *Perceptual test data*—Most experimental subjects report striking perceptual aberrations after the experiment: straight lines appear to move, triangles seem to change shape, halos develop and figures become larger or smaller. As far as can be ascertained the results of perceptual tests did not seem to be related to the ego-integrity of the subject.

2. *Imagery reported by the subject or elicited by interview*—We have been most interested in the striking sensory deprivation imagery which appears spontaneously and which resembles hypnagogic imagery, probably due to the fact that sensory deprivation promotes a transitional state between sleep and wakefulness(3). To the subject, it seems autonomous and appears to be foreign to his thoughts and experiences. It is often quite colorful and striking in detail, having short duration with successive images seemingly unrelated. Our techniques did not permit us to understand the meaning of the imagery and its relationship to the subject's personality. However, it does not appear to be correlated either in extent or intensity with ego integration. This lack of relationship must be viewed in terms of the fact that these subjects were for the most part selected so as to be a fairly homogeneous population and only a few of them could be considered as less than average in general adjustment. In these few less integrated subjects, imagery has also been present, and it is our impression that they had a greater tendency to

interact with their imagery and to be more emotionally involved with it than the healthier subjects, which may reflect a lessened ability to reality test in a situation which interferes with this ego function, impairing the autonomy of the ego from the id(11).

Imagery occurs significantly more often in those subjects who habitually have hypnagogic imagery. This observation is statistically significant. It probably is also correlated with frequent dreaming when visual elements of the dream predominate. We have suspected that imagery may be more prevalent in subjects interested in the visual arts and have preliminary data confirming this hypothesis. Distortions in other sense modalities than the visual occurred, and changes in body image, kinaesthetic and auditory misperceptions were noted, but not sufficiently often so that they could be correlated with ego-integrity.

3. *Total responses of the subject as observed, reported by the subject and determined by post-experimental interview*—Healthy subjects have been able to tolerate the sensory deprivation situation for 8 hours. Only 3 subjects had to terminate early, an observation which will be discussed later. In general, healthy subjects reported that they felt relatively comfortable. This we believe is due to their ability to use a variety of regressive and defensive techniques such as sleeping, engaging in time-passing maneuvers such as doing problems, exploring their environment and sometimes freely fantasizing. Often they were willing to return, but if run a second time reported more boredom. This we feel is because the need to prove oneself is not present in a re-run.

In our subjects several sub-groups manifested special responses. First, there were 3 subjects with schizoid personalities whose reactions were characterized by withdrawal, isolation, repression and intellectualization. They were usually passive persons lacking in warm human relationships, who lived lonely and solitary lives. These subjects were unusual because of their lack of involvement in the experiment. Although they cooperated passively, they experienced little or no imagery and generally found the

experience pleasant and undisturbing. As one of them said:

I feel that I'm much more suited to taking this kind of thing than the average person. I think other people are less used to these kinds of conditions, therefore they might be more thrown by them and might react more abnormally. This is much more like my normal life . . . being alone, not moving much.

There is always a real possibility that these or other subjects are repressing or denying feelings and imagery or that they simply refuse to reveal it. Unfortunately, all that can be done is to be aware of this possibility since regardless of how intensive the study some areas of personality will perforce remain unexplored.

Two subjects were diagnosed as borderline states. Both relied on narcissistic defenses such as projection, distortion and denial. One subject (A) had serious confusions about his sexual identity, much overt anxiety and a need to act-out. The other, (B), was more vague, confused and withdrawn.

Subject A was motivated by "curiosity about . . . rats, mazes and hypnosis." He came from a very disturbed family: his father subject to violent rages and his mother often unable to control herself. Home, he said was "horrible." He said, "I enjoy not only heterosexual but also homosexual relationships." During the interview he was preoccupied by what the interviewer would think and what his facial expressions "meant." We predicted that he would not tolerate the experiment and during it he spoke of having sensations in his left foot which "are intolerable, driving me crazy, practically unbearable . . . which I cannot take." He terminated after one hour. Afterwards he said that he did not think the investigators were "sadists or anything . . . out to kill me or anything" and compared the experiment to "1984, with cages of rats and the Chinese tickling situation where they drive you insane."

In summary, he was diagnosed as a borderline state and developed intolerably frightening fantasies in an unstructured situation.

Subject B, when asked why he was doing the experiment, was only able to say, "It was posted." He expected that, "It sounds great . . . and is a question of patience . . . I will

try to leave the experiment behind and go to someheres in my head." He was somewhat vague about his life, reporting that his mother had just seemed to happen. Unlike Subject A who was more paranoid, he tended to be more vague and confused, although functioning somewhat better academically. He tolerated the 8-hour sensory deprivation, reporting that "I saw pictures like my dreams, which are catastrophic." His imagery was of, ". . . men and women walking in the rain," or "lots of colors I'd never seen before" which were described as pleasant. But unlike most subjects he had frightening imagery such as "crates 14 miles high . . . someone clinging to them; they all tumble down and I wanted to get out of the way." He also reported "powerful odors," "clicking signals" and "tingles in my leg . . . maybe current." He was wary of the investigators, wondering if he would "get electric shocks," feeling "sort of hypnosis" worrying about "being driven mad," and wondering if "I was running the machine or they would control me." He handled these fears by "letting time pass" and "not living in my head . . . feeling disconnected."

In summary, he was diagnosed a borderline state, more passive and withdrawn than Subject A and somewhat better functioning. Due to his ability to withdraw and lesser need to act-out, he was able to tolerate the experiment despite frightening fantasies.

In the last sub-group were 2 subjects who had strong psychopathic tendencies. They were facile, glib persons, able to talk their way through life, who were superficially successful but who had impaired object relations, viewing people as objects to be manipulated and used. These 2 subjects did not terminate the experiment themselves, but rather, forced its termination by their behavior, such as removing the goggles, earphones, etc. They justified this on the basis of minor discomforts, saying that, "they did not know it was really important." It is clear that they behaved in sensory deprivation as they did habitually.

Motivation and expectation were often difficult to elicit. Subjects usually reported need for money and some curiosity. It was only in the less healthy subjects that bizarre motivations and expectations could be elicited. We were impressed that the need to prove oneself or learn about oneself was rarely mentioned; and are inclined

to believe that the "common sense" motivations and expectations of most of our subjects reflect the strength of their defenses and that revealing the need to prove oneself and other more bizarre feelings are a sign of impaired ego integrity. Save for this general correlation, no specific relation of motivations and expectations with experimental findings was found.

DISCUSSION

Perhaps sensory deprivation can be viewed most usefully as an ambiguous situation which may be structured in various ways, depending on the subject's perceptions, and then defended against accordingly. We would emphasize that our subjects, except for being told to report their experiences occasionally and told how long they would be in, were told nothing of what we expected or wanted, although the initial interview with its emphasis on imagery may produce a special "set." Cohen and Silverman(4) have noted that even briefer exposures to sensory deprivation with even less preparation are quite disturbing. Not only is there a lack of patterning of incoming visual, auditory and touch-proprioception stimuli, but there is also a lack of patterning as to expectations. The subject does not know what will happen nor what to do about it.

The subject's only external sensations are relatively monotonous and unpatterned. He may have to defend himself against them and shut them out. He is also handicapped in effective reality testing of his internal sensations in a situation where certain defenses such as acting-out are limited. It would seem likely that subjects using certain patterns of adaptation and defense will find sensory deprivation more tolerable than others who favor those techniques which are most curtailed.

We are impressed that how a subject does handle this unstructured situation is quite consonant with his personality and in particular of his defensive and adaptive resources. Almost all members of a healthy population were able to tolerate an 8-hour period of sensory deprivation as we have structured it. Those who could not appeared to be subjects in whom reality testing was impaired and where acting-out

of impulses was a central defense. The behavior states and perceptions of these subjects and states of some patients are well able to tolerate isolation through the use of withdrawal because it is a situation harmonizing with this defense. Whether they would be able to work or solve problems is unknown, although it may be doubted, and the use of withdrawal as a defense is intolerable in any situation demanding task orientation such as would be the case in space flight.

Imagery does not seem to correlate in extent or intensity with ego integrity but rather with a history of hypnagogic imagery and is present in healthy and other subjects alike. There is probably a difference in ability to reality test imagery in sicker subjects which might lead to its being perceived as real, i.e., an hallucination. However, we are inclined to believe that the nature of the subjects' relationship to the experimenters, the fears of ego dissolution and the limitation on certain critical defenses are the major factors in the production of both hallucinations and delusions in sensory deprivation.

Which of the variables of the experiment seems to be crucial in the production of imagery? Our subjects have experienced imagery with the use of both blackout and translucent goggles and hence one of the prerequisites for imagery would appear to be non-patterning of visual stimuli. However, in the experiments of Vernon(5, 6) where vision and audition were blacked out, but subjects were allowed to move around, imagery was virtually absent. Thus deprivation of visual patterning is probably necessary, but not sufficient for imagery production.

We believe that the additional necessary factor for the production of imagery may be the limitations of the senses of touch and proprioception. Such restrictions were present in the McGill(1, 2), Boston City Hospital(7, 8), New York University(9), and National Institute of Mental Health(10) experiments as well as ours, and in all of these imagery has occurred. The importance of touch and proprioception in determining and maintaining the definition of the body can hardly be overemphasized. There is suggestive evidence that the first psychic

construct is that of the "body ego" and these sensations are both phylogenetically and ontogenetically the most primitive (12). We are thus impressed with the need for the study of touch and proprioception in sensory deprivation.

CONCLUSIONS

1. We found no relationship between gross clinical ratings of "ego-integrity" and the production of perceptual aberrations in this experiment.

2. Imagery occurs in subjects who habitually have hypnagogic imagery, both healthy and unhealthy. Less healthy subjects are more likely to interact with their imagery in an emotional way due to impaired reality testing.

3. Sensory deprivation is an ambiguous situation which the subject structures according to his own personality and handles with his habitual adaptive and defensive resources.

4. We believe that sensory deprivation does not shed much light on the psychodynamics of personality save for reactions to solitude and loneliness. It does, however, offer unique opportunity for the study of the interrelations of the various components of the perceptual apparatus and for the elucidation of the nature and meaning of hypnagogic imagery. For these studies more careful perceptual measurements and

more sensitive techniques permitting greater insight into the relationship of imagery to personality are necessary.

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PSYCHIATRIC OBSERVATIONS ON CONGENITAL AND ACQUIRED DEAFNESS : SYMBOLIC AND PERCEPTUAL PROCESSES IN DREAMS ^{1, 2}

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INTRODUCTION

There have been many investigations concerned with the psychology and psychopathology of the deaf and hard of hearing (1, 2, 3). It was not the purpose of this study to explore further these areas, but to focus upon specific perceptual and symbolic processes occurring in the dreams of deaf students. Relatively few studies have assessed the quality of perceptual experiences in dreams (4), and only an occasional investigation (5) has dealt with these in the deaf individual. The question might be asked, "What value is there in studying perceptual and symbolic experiences in the dreams of deaf individuals?" Although Gesell (6) has pointed out that the full term neonate assumes listening attitudes to the sound of human voice within the first fortnight after birth, tactile and visual sensory impressions appear to be as important as auditory stimuli for the pre-language child. Indeed, very young children can communicate reasonably well without words. Though older children and adults retain this ability as verbal language becomes increasingly more important, they utilize it chiefly in an unconscious manner, expressing it in posture, mannerisms, gestures, intuition and certain attributes of personality. A better knowledge of non-

verbal communication processes would appear to be of value in understanding the psychological growth and development of man.

We have studied deaf college students who employ the language of signs and the manual alphabet as their principal mode of communication. Our major postulate was that an individual deprived of the normal auditory and verbal processes of perception and communication in his social and cultural environment, will uniquely incorporate necessary modifications of such perception and communication into his fantasy behavior and dreams.

METHOD

Twenty-six college students between the ages of 18 and 24 were the subjects of this study. Three categories of students were investigated (Table 1): 1. Congenitally

SUBJECT POPULATION

TYPE OF DEAFNESS	N	AGE RANGE (YRS.)	SEX
CONGENITAL	12	17-23	M-6, F-6
ACQUIRED BEFORE AGE FIVE	8	18-22	M-3, F-5
ACQUIRED AFTER AGE FIVE	6	19-23	M-4, F-2

TABLE 1

¹ Read at the 115th Annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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We wish to acknowledge the kind and generous assistance of Dean George Detmold and Professor William C. Stokoe, Jr., Gallaudet College, Washington, D. C.

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deaf; 2. Acquired deafness before age 5; 3. Acquired deafness after age 5.

These students came from a wide variety of socio-economic backgrounds but had the following characteristics in common:

1. All were totally deaf with the hearing loss of 80 db bilaterally.

2. All were enrolled as full-time students at Gallaudet College, the national college for the deaf.

3. All had similar I.Q. levels, and a high proficiency of communication with sign language methods.

Semi-structured psychiatric interviews

were conducted in the language of signs and with the use of the manual alphabet. The adequacy of such an interview procedure is dependent upon a number of factors. First, it is necessary for the interviewer to be proficient in the method of sign language communication not only in terms of an academic knowledge of the signs themselves, but also in terms of the multiple nuances of facial expression which accompany signing. Second, the interviewer must be accepted by and in good rapport with the subject. To accomplish both of these aims a member of the liberal arts staff of Gallaudet College (Dr. Siger) acted as interpreter in all interviews. Because the type of language employed by the deaf individual in part determines what he communicates, some consideration of communication processes employed by the deaf is necessary.

The avenues of communication open to the deaf include writing, speech, lip reading, the manual alphabet, and the language of signs. But the majority of the American deaf population communicate by means of the conventional language of signs, manual gestures which are, except for recognized dialectal variants(7), consistently and universally used to represent the same object, action, or idea. Users of the language all over the country understand each other perfectly; its use is consistent and universal to the extent that one may encounter comment on the style of delivery or "diction," as it were, of a given user of the language. There is a standard or orthodox language, upheld by purists, as with English, and there are forms of it filled with "colloquial" or "slang" expressions.

This conventional language of signs is not to be confused with the so-called "natural" language of mimicry attributed to the deaf. A linguistic analysis has been made of the spontaneously invented gestural communication of deaf children in an oralist school(8), but what is found, rather than a systematic language, is a makeshift and auxiliary means of communication operating somewhere between heightened free gesturing and depressed vocalization. Moreover, wide variation has been found among the gestures used by different children for the same action or thing. Finally, it has

been found that when the lower face of the subjects is covered and they are thus deprived of seeing the silent mouthing of the spoken language, they are unable to comprehend one another. This kind of signing, then, is not entirely unlike the spontaneously invented or "home-made" signs that a hearing parent will use with a deaf child, or which will be called forth from anyone attempting to communicate with a non-hearing individual.

Returning, however, to the conventional sign language, at the present time a descriptive analysis of its linguistic structure is being made at Gallaudet College(7), the student body of which represents a cross-section of the entire young adult deaf population of the United States. As an instructional medium Gallaudet College uses the simultaneous method of communication, lip reading, hearing aids, the language of signs, and the manual alphabet, but outside the classroom the students communicate almost exclusively by means of the conventional sign language.

The number of words in the language is small; estimates and handbook lists range from 2000 to 5000 separate items. There would seem to be a paucity of words when compared to the tens of thousands in the English abridged dictionaries. But the comparison is misleading, for it is not so much that the sign language lacks a large vocabulary as that there are relatively few unique or individuated signs. The English language, as opposed to the sign language, is unusually rich in what may be called *vocabulary in echelon*. For example, to express the notion of extended size there are in English a number of morphologically unique words: *big, large, great, huge, massive, immense, gigantic, colossal, stupendous*.

The quality denoted by the adjective "big" is signed by placing the two hands in a neutral position before the body with palms facing and then drawing them apart, thus indicating extended size (Figure 1). There are no separate signs, to be sure, for *huge* or *gigantic*, but one can increase the spatial volume of the basic sign for "big" by extending the hands farther from the body, by drawing them farther apart, by changing the speed with which they are

BIG



HUGE



GIGANTIC



FIG. 1

ually, and by generally increasing muscular

the equivalent in speech of pronouncing a word successively louder; it is closer to

The language of signs also appears, by

such transcriptions of sign language as *Happy-much-I-be-here-*

day-now for "I am indeed very happy to be here with all of you today." What is lacking, however, in verbal transcriptions such as the one we have given are the smooth, manually-produced ligatures between sign and sign and the inseparable facial gesturing which supplies for the signs what is provided for in speech by the intonation pattern made up of pitch, tone and accent (9, 10).

In signing what we have transcribed as *Happy-much-I-be-here*

the palm of the right hand is held flat against the heart two or three times; then both hands are extended before the body with fingers slightly spread, the thumbs held apart in a single motion; then the index finger is raised to the forehead and partly moved out from them in a straight line; then both hands are extended forward palms up and describe a circle with the right hand circling on a horizontal plane to the right while the left hand circles to the left simultaneously; then both hands making fists with the thumbs on top are extended before the body and brought together; then the index finger of the right hand is pointed out as if rapidly counting the assemblage, then with the left hand held out flat the right hand makes a complete circle around it, completing the action with its back resting on the palm of the left hand; then with the left arm held horizontally across the body, the right elbow is rested on the open left hand with the index finger of the right hand pointing past the elbow of the left arm, then the right arm with elbow still on the left hand and right-hand index finger extended is raised up and out; and then both hands are cupped with the palms up, extended

the
easier than does to English,
accompanying

for
sign

RESULTS

Table 1. Characteristics of dreams in Table 2

Characteristic	Congenitally deaf		Acquired deafness	
	Frequency	Percentage	Frequency	Percentage
Color	10	100	10	100
Dimension	10	100	10	100
Frequency	10	100	10	100
Intensity	10	100	10	100
Duration	10	100	10	100
Content	10	100	10	100
Emotion	10	100	10	100
Clarity	10	100	10	100
Repetition	10	100	10	100
Association	10	100	10	100
Symbolism	10	100	10	100
Imagery	10	100	10	100
Memory	10	100	10	100
Attention	10	100	10	100
Concentration	10	100	10	100
Perception	10	100	10	100
Thought	10	100	10	100
Feeling	10	100	10	100
Motion	10	100	10	100
Sound	10	100	10	100
Smell	10	100	10	100
Taste	10	100	10	100
Touch	10	100	10	100
Pressure	10	100	10	100
Temperature	10	100	10	100
Humidity	10	100	10	100
Light	10	100	10	100
Darkness	10	100	10	100
Sound	10	100	10	100
Smell	10	100	10	100
Taste	10	100	10	100
Touch	10	100	10	100
Pressure	10	100	10	100
Temperature	10	100	10	100
Humidity	10	100	10	100
Light	10	100	10	100
Darkness	10	100	10	100

Characteristics of dreams in congenitally deaf were more frequent than those with acquired deafness. However, dreams with a partial deafness prior to age 5 had more frequent dreams than those whose deafness occurred after 5 years of age. The perceptual characteristics occurring in dreams are reported in Tables 3 and 4. The dreams of the congenitally deaf were characteristically in bright color usually described as "technicolor" and contained primary colors in high saturation and intensity. Also dreams of the congenitally deaf were for the most part three-dimensional rather than flat. The dreams of students with acquired deafness before age 5 resembled those of the congenitally deaf in terms of color and dimen-

**COLOR AND DIMENSION IN DREAMS
(PERCENT)**

TYPE OF DEAFNESS

PERCEPTUAL EXPERIENCE	CONGENITAL	ACQUIRED BEFORE AGE FIVE	ACQUIRED AFTER AGE FIVE
COLOR	82	75	17
BLACK AND WHITE	8	25	83
3-D	84	87	50
FLAT	16	13	50

TABLE 3

**MOTION AND VIVIDNESS IN DREAMS
(PERCENT)**

TYPE OF DEAFNESS

PERCEPTUAL EXPERIENCE	CONGENITAL	ACQUIRED BEFORE AGE FIVE	ACQUIRED AFTER AGE FIVE
STATIC	84	75	83
MOTION (OTHER THAN SIGNING)	16	25	17
VIVID ON RECALL	92	87	87
FAINT ON RECALL	8	13	33

TABLE 4

**COMMUNICATION PROCESS IN DREAMS
(PERCENT)**

TYPE OF DREAM AFFECTIVE COMPONENT	COMMUNICATION PROCESS	TYPE OF DEAFNESS		
		CONGENITAL	ACQUIRED BEFORE AGE FIVE	ACQUIRED AFTER AGE FIVE
PLEASANT	LANGUAGE OF SIGNS	33	37	33
	PRIMITIVE SIGNS	17	0	0
	NON-VERBAL "SOUND"	42	50	50
		8	13	17
ANXIOUS	LANGUAGE OF SIGNS	17	38	33
	PRIMITIVE SIGNS	75	0	0
	NON-VERBAL "SOUND"	8	50	50
		0	12	17
NEUTRAL	LANGUAGE OF SIGNS	84	63	33
	PRIMITIVE SIGNS	0	0	0
	NON-VERBAL "SOUND"	16	25	50
		0	12	17

TABLE 5

sion while dreams of students with acquired deafness after age 5 tended to lack color and were evenly divided between flat and three-dimensional appearances.

The perception of motion of objects other than movement involved in signing occurred infrequently in the dreams of both the congenitally deaf and acquired deaf. There was a striking degree of vividness for dreams on recall by both the students with congenital deafness and acquired

deafness prior to age 5. This was less so for students with acquired deafness after age 5.

The communication processes experienced in dreams are reported in Table 5. Dreams are divided into 3 general categories, pleasant, anxious and neutral, based upon the affect the subject experienced while dreaming. Communication processes are divided into 4 categories:

1. Language of signs: the standard method of communication by signing used in everyday life.

2. Primitive signs: gestural communication employed by parents or parental figures in early childhood before the standard language of signs was learned. Such gestures usually conveyed strong affective qualities such as anger, disapproval, warning, fear, and occasionally approval and praise.

3. Non-verbal: communication without the language of signs, primitive signs or "sound" via an intuitive form of understanding.

4. "Sound": a mixture of auditory and frequently tactile sensory impression. Relatively simple messages were conveyed by this means, not complex thoughts or ideas.

In "pleasant" dreams, communication to or by the subject occurred most frequently in a non-verbal form with the language of signs appearing next frequently. "Sound" perception occurred infrequently in all groups of subjects but it tended to appear most frequently in those subjects with acquired deafness after age 5. Primitive signs appeared in the dreams of the congenitally deaf but not in the other groups.

In "anxious" dreams or nightmares of the congenitally deaf there was a striking prevalence of primitive signs. These signs, though originally employed by parents or parental figures, could be signed in dreams by people who were quite unknown to the subject. It is significant that no primitive signs appeared in the anxious dreams of the other two groups. In other respects the anxious dreams resembled those of the pleasant dreams for the three groups of students.

In "neutral" dreams there was a tendency for an increased degree of non-verbal communication and a decreased degree of language of signs from congenital deafness to

acquired deafness after age 5. No primitive signs appeared for any students in neutral dreams and the incidence of "sound" in these dreams was also small.

DISCUSSION

It is clear from our data that the dreams of our deaf students are distinctly different from the dreams of the hearing (4, 11, 12). The differences reside in greater vividness, depth of spatial dimension, and color, as well as generally greater frequency or, more accurately, greater frequency of recall. How can we explain these differences? It seems to us that much may hinge on the balance between dream repression and dream recall.

It is a familiar observation that dreams in all of us may be vividly remembered on awakening and yet disappear a moment later. It has been our experience that the occurrence of sensory stimulation, particularly auditory stimulation, contributes greatly to such a disappearance. A word from your wife, a cry from the baby, or the sound of the alarm clock, and your dream may be gone forever. The deaf do not have this type of stimulation and in their soundless awakening, dreams linger on and retain their vividness and color. Perhaps this is a small compensation for the dullness of a completely silent existence.

It may be considered a partial corroboration of the reasoning just discussed that in experimental sensory deprivation (13, 14), visual imagery, fantasies, and hallucinatory experiences are reported as unusually vivid and colorful, much as in the dreams of the deaf. It may be hypothesized that just as sensory deprivation, with its weakening of the secondary process and the ties to outer reality, encourages the emergence of the primary process with its primitive and instinctual characteristics, sensory stimulation, especially auditory stimulation, facilitates the phenomenon of repression and may be a necessary concomitant of it.

An alternative explanation to the vividness and frequency of dreams in the deaf is the possibility that the dream censor and indeed the entire superego structure in the deaf may be impaired. Isakower (15) believed the development of the superego was intimately associated with significant auditory experiences. However, Knapp has pointed out (16), "The congenitally deaf do

not have the auditory experiences which are necessary for the development of the superego structure. We do not intend to enter into a detailed discussion of the superego structure in the deaf at this time, since we have seen abundant evidence of superego structuring in our deaf population. For example, the appearance of primitive signs in affectively loaded dreams of the congenitally deaf indicates introjection and subsequent displacement at very early non-verbal superego maturation. Actually, one of the opportunities which the deaf population offers is that of studying the non-verbal aspects of superego functioning, since the kineseic language of the congenitally deaf, though modified later by the more formal symbols of the language of signs, is not obscured by the verbal symbols of the hearing.

The characteristic differences in the dreams of the deaf were most marked in the congenitally deaf, less prominent in those with acquired deafness before the age of 5, and least noticeable in those with acquired deafness after age 5. If these differences are related to facility for repression as correlated to auditory sensory input, then our findings would suggest that the template for this type of repression is laid down in the very early years of life. Such a conclusion, of course, is entirely consonant with standard psychoanalytic theory and emphasizes the growing realization in both animal experimentation and developmental work with children of the importance of the past sensory history of the organism.

SUMMARY

Twenty-six deaf college students were interviewed in the language of signs and manual alphabet to obtain information concerning the symbolic and perceptual processes experienced in their dreams. It was found that the dreams of the congenitally deaf were vivid, brilliantly colored, and reported as frequent in occurrence. Usually the language of signs was the means of communication in the dream, but in dreams in which affect was prominent, primitive signs were often utilized. The characteristic differences in the dreams of the deaf were most marked in the congenitally deaf, less marked in those with acquired deafness be-

fore age 5, and least marked in those with acquired deafness after age 5.

The relevance of these findings to super-ego formation, non-verbal communication processes, and recent observations in experimental sensory deprivation is discussed.

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THE EFFECT OF VISUAL STIMULATION ON HALLUCINATIONS AND OTHER MENTAL EXPERIENCES DURING SENSORY DEPRIVATION¹

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Sensory deprivation is a new experimental approach to the problem of hallucinations and other abnormal mental states. Investigators, using different methods, have reported a wide variety of results. In general, those experiments in which sensory input was drastically cut down but movement was permitted produced very little hallucinatory experience(1, 2), while those in which there was more sensory input in the form of sensory monotony, but movement was restricted, brought about more hallucinatory experience(3, 4, 5). The question of what basic factors cause the mental phenomena in sensory deprivation is still unsettled.

We have designed an experiment to test the hypothesis that it is not the absence of sensory stimulation *per se* that produces the effects of sensory deprivation, but the absence of *meaningful* stimulation. Visual stimulation was added to subjects in a previously standardized sensory deprivation procedure and the prediction was made that this stimulation would not prevent the mental aberrations that usually result.

PROCEDURE

Ten adult male college and graduate students, recruited through the offer of pay per hour, served as subjects. The procedure, which has been described in detail elsewhere(5), involved the use of a tank-type respirator with the vents open, a semi-darkened room, the wearing of cardboard cuffs over the arms and legs, and the presence of a constant repetitive auditory stim-

ulus from the motors of the respirator and an air conditioner. Heart rate was monitored by an electrocardiograph and the subjects' verbalizations were tape recorded. A white 150 watt light was flashed on a random schedule determined by a table of random numbers, as follows: one one-second flash every 1 to 9 minutes starting after a randomly chosen interval of time from the beginning of the experiment; supplementary flashes of a random duration (1 to 20 minutes) occurring every 50 to 99 minutes, determined randomly. The colored Rorschach cards were also flashed on the wall, through the use of a tachistoscope, in random order and on a random schedule of one every 50 to 99 minutes for a random duration of 0.1 to 1.0 second.

Subjects were kept in the respirator 10 hours⁵ unless they asked to be let out earlier. Psychological tests were administered and interviews were conducted immediately after the subjects left the respirator and in a control period. The mental experiences during the experiment were classified as: analogies, daydreams, fantasies, pseudo-somatic delusions, illusions and hallucinations, using the same criteria as in previous experiments in this laboratory(4, 5).

RESULTS

The results are shown in Table I. Five of the 10 subjects remained in the tank for the required time, the others leaving after intervals of 38 minutes to 6½ hours. Six subjects experienced hallucinations or illusions such as: hallucinations of playing baseball, skin diving, being on a troop ship, feeling chips of paint or specks of dirt falling from the ceiling, water dripping, delusions of the egg nog being poisoned.

⁵ On the basis of past experience, 10½ hours was chosen as the optimum period, since almost all subjects who experienced psychological changes did so within this period of time(5).

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SUBJECTS	ANALOGIES	DAYDREAMS	FANTASIES	PSEUDO-SOMATIC DELUSIONS	ILLUSIONS	HALLUCINATIONS
A	X	X		X		
B	X				X	
E	X	X	X	X		X A, B III
J		X				
K	X	X				X A, I
L						
M	X				X	
P		X			X	
T			X			
W	X	X	X			X A, B III
	6	6	3	2	3	3

TABLE 1

MENTAL EXPERIENCES IN 10 SUBJECTS EXPOSED TO MODIFIED SENSORY DEPRIVATION :

Hallucinations are classified, according to Vernon(1) : Type I—"Flashes of light, flickering lights, dim glowing lights, etc., which appear in the visual periphery." Type II—"Hallucinations of definite shape which are geometric in nature (squares, circles, etc.)." Type III—"Structured integrated scenes which sometimes are even animated." In addition, "A" denotes that the subject had insight that his "hallucination" was not real, "B" denotes the absence of such insight.

feeling shocks from the electrocardiograph leads, smelling the electrode jelly melting.

The subject who stayed 38 minutes screamed to be let out, tore off his electrocardiograph leads, ripped his equipment apart and clawed wildly at the apparatus. Though he looked terrified, he denied completely any anxiety or discomfort.

A statistical comparison of the results obtained in this experiment with those in previous experiments(4) (chi square test) and(5) (Fisher Exact Test), in which no visual stimulation was used, indicated no significant differences with respect to the number of subjects who experienced the

different categories of mental aberrations.

When the psychological performance test scores were compared with the test scores taken in a control period, the results indicated an impairment in the Wechsler digit symbol test significant to the .05 level (Sign test), but there were no significant differences in the block design and hidden figure tests. Subjects who did well on the hidden figure test tended to have hallucinations and illusions (significant to the .05 level on the Mann-Whitney test). The Smith and Beecher Adjective Check List(6) indicated that subjects changed consistently in their feeling states during the experiments. They

experienced significantly (.05 level Wilcoxon Sign-rank test) more feelings of mental clouding, somatic complaints, and physical inactivity, while they had fewer feelings of mental activity, elation, rebelliousness, friendliness, and calmness. It is also of interest that those subjects who experienced the most mental clouding had the greatest drop in heart rate from the initial rapid heart rate at the beginning of the experiment to their more stable slower heart rate during the middle of the experiment. The rank order correlation of mental clouding with drop in heart rate was 0.66 (significant to the .05 level).

DISCUSSION

The basic theoretical framework implicit in many of the experiments in sensory deprivation, in fact, implicit in the term "sensory deprivation" itself, is that the hallucinations and other reactions produced in isolation experiments are a result of literal deprivation of sensation. It has been felt that the brain needs some quantity of, or change in, sensory input to keep it alert, through alerting mechanisms of various types. In psychoanalytic theory, the functioning of the "secondary process" is viewed as being dependent on the entrance of sensory input or change in quantity of input into the mental apparatus. In the absence of such input or changing input, the primary process tends to emerge. In brief, the cortex, and the secondary process are considered not to be autonomous, but in need of a quantity of sensory input to drive it. We feel that this explanation needs modification. If deprivation of quantity of sensation *per se* caused the hallucinations, it would follow that in situations where there is severe sensory deprivation, hallucinations would occur frequently and be severe, and as any sensation is added to the deprivation situation the frequency and severity of the hallucinations would decrease. However, if hallucinations occur not as a result of deprivation of quantity of sensation *per se* but rather as a result of isolation from meaningful contact with the outside world it would follow that as sensation is added to the deprivation situation, the frequency and the severity would not decrease unless the stimuli that are

added are meaningful. That is, as more and more sensation is introduced we would expect some hallucinations until there is considerable contact with the outside world.

What we have done is deliberately to add sensation to a sensory deprivation situation by introducing a quantitative change in sensation (a flashing light). The characteristic changes consequent to sensory deprivation have generally been mental aberrations, including hallucinations, emotional disturbances and intellectual impairment. Our experiment demonstrated all of these. Our results are consistent with the hypothesis which emphasizes the parameter of *meaning*, since even though considerable changing sensation was added, the hallucinations and other effects did occur and is inconsistent with the hypothesis emphasizing the role of sensation *per se*.

Our findings of a deficit on the digit symbol test is consistent with Heron's *et al.* (7) finding of a similar deficit after their sensory deprivation situation. The absence of a deficit on our other performance tests may be due to the small size of our sample in relation to the reliability of the tests.

The drop of heart rate of the mentally clouded subjects suggests that the physiological response to stress in terms of heart rate may be less in subjects who react to sensory deprivation with subjective mental clouding. Perhaps the mental clouding serves as a withdrawal from the situation and thus tends to reduce anxiety and hence heart rate.

It should be noted that we have studied but one of the many ways in which the results of sensory deprivation could be modified by adding stimulation. Sound, tactile stimulation, and other types and durations of visual stimuli could have been used. Further research is indicated.

CONCLUSIONS

While much of the work in sensory deprivation implies that sufficient sensory input will prevent the occurrence of the disorganizing effects seen, our results suggest that the parameter of meaningfulness of input should be considered. The alerting action of random visual stimulation is not sufficient, under the conditions of our ex-

perment, to prevent the occurrence of mental aberrations. It appears that what the brain needs for normal functioning is not quantity or change in sensation *per se*, but a continuous meaningful contact with the outside world.

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OBSERVATIONS ON MENTAL SYMPTOMS IN EYE PATCHED PATIENTS : HYPNAGOGIC SYMPTOMS IN SENSORY DEPRIVATION

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Psychotic symptoms in patients with eyes bilaterally patched have been reported previously(1), but their development is not adequately understood(2). A high incidence of lesser mental symptoms in patients after operation for senile cataracts has also been noted(3). It occurred to us that such minimal disturbance might throw some light on the origin of the mental complications of sensory deprivation in general(4, 5, 6). Accordingly, we studied patients with eyes bilaterally patched because they presented visual and some proprioceptive deprivation and a relative degree of social isolation. In addition to the confinement to bed, patients were denied visitors for two days after surgery. The mental symptoms arising under these circumstances were therefore considered in part at least the result of relative sensory deprivation⁵ and isolation. A new symptom peculiar to our study suggests that hypnagogic and other states of

reduced awareness are highly contributory to the mental abnormality.

PROCEDURE

Observations for mental symptoms were made on 88 patients with cataracts and on 10 with detachment of the retina admitted for eye surgery from October through December, 1958. Patients were 8 to 88 years old. A small number could not speak English, and some had impaired hearing. Patients with detachment of the retina had their eyes patched from 7 to 14 days prior to surgery and from 14 to 30 days afterwards; those with cataracts were patched only for 24 hours after their operations. The patients with detachment of the retina represent our core material. Because they are patched for long periods, they have a greater incidence of mental pathology. Furthermore, as a group they are younger than cataract patients, with an average age of 39 compared to 60, and can be more readily observed free from complications of the effects of the operation and medicines.

Psychiatric interviews averaging one hour were carried out by two psychiatrists and two supervised medical students⁶ before the patients' eyes were patched. When this was impossible, such examinations were conducted during or after the patching. The interview was initially permissive (8) so as to obtain the picture of emotional reactions and life situational factors.

Mental disabilities which arose during patching were observed daily until they disappeared or were considered chronic and perhaps irreversible. No psychological

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⁵ Formerly we referred to isolation and sensory deprivation together for historical reasons. Many of the facts uncovered by the recent experiments on sensory deprivation were known long before from the experiences with social isolation. Furthermore, isolation and sensory deprivation usually occur together; indeed it is difficult, if not impossible, to create sensory deprivation without personal isolation. At first glance it appears as if the periods of sensory deprivation which suffice to produce symptoms are too short for social isolation to be a significant factor. Elsewhere(7) we present considerations to indicate that such may not be the case. Social isolation is in effect conceptual deprivation. Should conceptual deprivation turn out to be as significant as, or a more basic factor than, sensory deprivation, then isolation will again receive more attention as a contributory factor.

⁶ Don Morrison and Jerry Lackner, whom we wish to thank for their assiduous assistance. Although further acknowledgement is due the entire ward personnel for their cooperation, we are particularly indebted to two nurses, Mrs. Mary Doughty and Miss Barbara Collins, for their unstinted devotion and many suggestions.

tests or social case histories were available because of lack of funds. Nor was there sufficient psychiatric personnel to monitor the patient's behavior around the clock. The psychiatric team saw the patients daily and responded when called for behavioral manifestations which occurred between visits. Some patients with cataracts were repatched for 8 to 24 hours after discharge from the hospital; some, before surgery; and some were observed through a second operation on the other eye.

Patients were observed, therefore, for the presence of mental symptoms before, during, and after bilateral patching of their eyes; hence, each patient served as his own control. The situation under observation was essentially one of sensory deprivation. Factors extraneous to sensory deprivation also present in our patients include anxiety, drugs, associated illness, and immobilization effects beyond diminished proprioceptive and tactile stimulation. Some of these factors were excluded at least in part by repatching tests and by selecting younger patients with detachment of the retina.⁷

RESULTS

Our report lends itself to division into two parts: data about 1. Mental symptoms in sensory deprivation and 2. Symptom formation. The first of these is discussed here briefly.

We noted a high frequency of mental symptoms among the patients whose eyes were covered bilaterally. These symptoms (noted below) included all or most of those reported in the sensory deprivation experiments of Hebb(4), Lilly(5), and Solomon(6). In addition, many of our patients sat up or unpatched their eyes despite contrary instructions. This non-compliance, previously not identified, seems to be a mental symptom and part of the sensory deprivation syndrome. The other minimal symptoms included minor degrees of clouding, restlessness, perceptual distortion (pseudohallucination),

⁷ Those minutiae of procedure which may be significant to a critical evaluation of the investigative work will appear in subsequent papers(7). Here only the chief features of the procedure are mentioned.

thinking disturbances, mood changes, and psychophysiologic manifestations. In patients with real or suggestive brain damage, there were also deliriod symptoms, e.g., confusion, disorientation, memory impairment, vivid hallucinations, subcortical hyperkinetic activity, and subsequent amnesia. Many of these symptoms were of rather short duration and often disappeared spontaneously or while the patient was interviewed.

1. Mental symptoms occurred in 100% of the retina detachment cases and in 30% of the cataract extraction cases (Table 1).

TABLE 1
MENTAL SYMPTOMS IN PATIENTS WITH EYES
BILATERALLY PATCHED

	Detachment of Retina Patients		Cataract Extraction Patients	
	No.	Percent	No.	Percent
All Mental Symptoms	10	100%	26	30%
Unpatched eyes	9	90%	8	9%
Sat Up	8	80%	7	8%
Hallucinations	4	40%	3	4%
Disorientation	—	—	14	16%
Total	10	100%	88	100%

The greater incidence of mental symptoms in the patients with detached retina is to be attributed to the longer period of patching. These mental complications in retinal detachment cases have not been mentioned in the literature that we have examined, perhaps because of the mildness of the manifestations.

2. Patients not speaking English and those with hearing defects, antecedent organic brain damage, or a history of alcoholism had a higher incidence of symptoms (Table 2).

3. The incidence of hemorrhage during the period of eye coverage was 5 times as common in the group with mental symptoms as in the group without (Table 3). The hemorrhages were equal in both groups in the period after the eyes were uncovered. The number of instances were too small for adequate statistical evaluation. It requires, however, no great imagination to see why the patient who sits up, walks about or unpatches his eyes might indeed sustain a hemorrhage.

TABLE 2

INHIBITORY FACTORS TO MENTAL SYMPTOMS IN PATIENTS WITH EYES

	BILATERALLY PATCHED		Cataract		Extraction	
	Detachment of Retina					
	Patients With Mental Symptoms		Patients With Mental Symptoms		Patients With Mental Symptoms	
	No.	Percent	No.	Percent	No.	Percent
Total	10	100%	26	100%	62	100%
Not Speaking English	1	10%	4	15%	1	2%
Impaired Hearing	3	30%	11	42%	18	29%
History of Alcoholism	4	40%	3	12%	1	2%
Average Age	39 years		60 years		60 years	

TABLE 3

SURGICAL COMPLICATIONS IN CATARACT EXTRACTION

	With Mental Symptoms		Without Mental Symptoms	
	No.	Percent	No.	Percent
I While Patched	24 Patients			
Hyphema	4	17%	2	3%
Iris prolapse	0	—	1	2%
Flat Chamber	1	4%	1	2%
II Post Patching	59 Patients			
Hyphema	2	8%	5	8%
Iris prolapse	0	—	1	2%
Flat chamber	3	12%	5	8%

DISCUSSION

By studying the minimal manifestations, some light has been thrown on the genesis of symptoms of sensory deprivation in patients with eyes bilaterally patched.

NON-COMPLIANCE—A SYMPTOM OF IMPAIRED INHIBITORY CONTROL

1. Eye patching effects resulted in a special mental symptom which we call non-compliance. We define non-compliance as unpatching and movement contrary to both the doctor's instruction and to personal motivation.

An early striking observation was that patients frequently failed to obey the physician's two instructions: to lie recumbent and to leave the patches in place. Although all patients were told that restoration of vision depended on full compliance with these instructions, a fair number did not obey (Table 1). One nurse, referring to a patient who sat up shortly after having been admonished for a similar offense, said, "That patient isn't mental, but he isn't right." He had acted contrite the first time but soon repeated the misdemeanor. In the past, such actions by patients have not been considered a mental symptom (unless they occurred in post-operative delirium or confusion), but were commonly attributed to lack of cooperation.

Non-compliance is not satisfactorily explained as lack of cooperation. These patients did not appear rebellious or incapable of accepting authority. Their nonconformance seemed all the more strange because they seldom complained about the restrictions or the difficulty in

4. Bilateral patching of the eyes of patients on an ophthalmologic service has impressed us as another technique for the study of basic problems in sensory deprivation which has special advantages. This technique encompasses elements of economy, ready availability, ready repetition, and high motivation of the subjects. This procedure is one of great sensitivity due to self-maintained voluntary controls and involves a lesser degree of sensory deprivation than the experimental methods of Hebb(4), Lilly(5), Solomon(6) or even Gibby(9). Although there are a number of complicating variables in any random population of eye cases, such as anxiety, drugs, disease and operative trauma, most of these can be eliminated by appropriate selection of cases and other controls.⁸

⁸ Prevention of mental symptoms in patients whose eyes are bilaterally patched is currently under investigation. Patients on the women's ward, are receiving increased interpersonal and symbolic stimulation; those on the male ward are being used as controls.

carrying them out. Instead, when confronted with the act, they either rationalized or gave an irrational reply, as if somewhat clouded.

It is an involuntary mental symptom. The fact that patients usually remove both patches suggests a clouded state. If the need to see were the only reason for not obeying instructions, the removal of the patch on the good eye alone would suffice. It seems clear, then, that non-complying acts are mental symptoms.

2. *The mental symptom of non-compliance occurred primarily in sleep or on awakening—in periods of reduced awareness.* Nine of the 10 patients with detachment of the retina unpatched their eyes. Six of the 9 performed this action during sleep or on awakening.⁹ Some of these patients had concomitant hypnagogic hallucinations.

Case 1. A patient who contended that he turned over and took off the patches in his sleep also reported waking one morning seated on the edge of the bed, thinking that he was in his own home about to go downstairs to breakfast. As his feet dangled over the side of the bed, he suddenly realized that they did not touch the floor. He then became mindful that he was in a high hospital bed and became clearly oriented immediately.

Case 2. Another patient "dreamed" he was seeing a white farm house. As he wakened, he pulled off his eye patches and sat up to see the house more clearly, since it seemed so real to him. At first he thought he saw the same house, and only later realized it was but a white sheet over a chair.

3. *Other possible causes of the non-compliance were not as significant as the state of reduced awareness.* Patients, presumably, might not comply with instructions for various other reasons, such as inability to accept authority, severe backache, toxic confusion with hyperactivity or hallucinatory fear, "action-stimulus" urge (Lilly) or a desire to see. Although we have had examples of all of these in our patients, the occurrence in reduced states of aware-

ness was the most common one to come to our attention.

However, most patients were on medication and this could be a contributory cause. Almost all patients received nembutal gr. 1⁰⁰, second gr. 1⁰⁰ or chloral hydrate gr. vii⁰⁰ for sleep each night and some Miltown 400 mg. t.i.d. We tried to set up adequate controls on drug effects. We did not see hypnagogic symptoms from these drugs in the same dosage ranges in other patients of comparable age on the eye ward and elsewhere. However, a more meticulous search might show them.

Other complicating factors such as anxiety, associated disease and old age were also excluded in our control group of patients with detachment of the retina. Extrasensory effects of immobilization such as loss of nitrogen and calcium and even profound loss of body weight, were more difficult to exclude(11).

Some mental symptoms of the eye-patched patients (non-compliance and pseudo-hallucinations), appear, therefore, to have been caused by the concurrence of sensory deprivation and states of reduced awareness. This was suggested first by the occurrence of such symptoms most often in periods of sleep or awakening. Second, other possible causes of the non-compliance, were not as prevalent nor as likely to play a casual role.

4. *The occasional appearance of non-compliance and other mental symptoms in daytime hours may be explained by the fact that these patients have periods of reduced awareness also during the daytime.* Although we do not have data on the incidence of such occurrences, the following considerations lend support to this hypothesis.

Covering of the eyes in the patients observed by us, tended to induce more periods of light sleep and of reduced awareness in the daytime than would occur normally. This observation was reaffirmed and emphasized when one of us (E. Z.) subjected himself to the Gibby(9) procedure of lying flat in bed with eyes covered and ears plugged for 8 hours. He was amazed to learn from the record how

⁹ In the large series of cases of the retina at the University of Stanford Ophthalmologic Service of Dr. Karl Pischel(10) nearly all patients have removed their eye patches during sleep at least once during their hospital stay.

frequently he had fallen asleep as judged by observers of his snoring.

Hypnagogic states¹⁰—which are states of reduced awareness—have been known to produce other, similar, mental symptoms. Some symptoms of cerebral origin are prone to occur in light sleep. One sees myoclonic jerks and hypnagogic hallucinations in the normal person, convulsions in epileptics and nocturnal deliria in patients with toxic and organic brain disease.

A state of reduced awareness would logically involve a loss or relaxation of normal self controls or inhibitions—and make possible the mental symptom of non-compliance. The eye-patched patient is highly motivated to cooperate because his vision is at stake. Despite pain or discomfort, he will not usually remove the patches or change position during full consciousness. There is the extra stress that withdrawal from the treatment procedure is condoned neither by the physician nor the patient. On the other hand, these acts take place semi-automatically without external aid in sleep or in states of impaired awareness.

The responsibility for obeying the doctor's instructions is the patient's; he can at any time disobey them, even without full awareness of what he is doing. He has an urge, continuous or intermittent, to change position and remove the patches. He usually resists it because of his high motivation. However, control may be at the price of constant vigilance. In the hypnagogic states and others of reduced awareness, vigilance is often impaired,

¹⁰ Although the symptoms of non-compliance and hallucination in our patients occurred predominantly in sleep or hypnagogic periods, we are not at all sure as to the degrees of impaired awareness or consciousness that are predisposing to this symptom formation. In the situation under which our patients were studied there were many more periods of sleep and arousal during the 24 hours than under natural circumstances. There are also more periods of less alertness, e.g. periods of difficulty of grasp, of day dreaming, of reverie and of aimless wandering of thoughts. In speaking of reduced periods of awareness we refer to the entire group of such states rather than the more restricted hypnagogic period. Furthermore, we have used the term hypnagogic to include both the transition periods from sleep to wakefulness and from wakefulness to sleep (the so-called hypnopompic period).

permitting forbidden actions to take place unopposed.

In the other sensory deprivation experiments, conditions are usually quite different. The subject as a rule cannot terminate the procedure unaided. Although the subject has the option of terminating the experiment at any time, he must indicate his desire to the experimenter before he is released from the chamber or respirator. Goal-directed speech is required to make his request known. Since such speech cannot be well formulated in a state of reduced awareness, his discomfort must rouse him before he can make these wants known. This behavioral sequence differs from the semi-automatic response which suffices in the situation we studied.

In addition, there is less motivation for the volunteer to endure discomfort (and less insistence by the experimenter) than for our patients, whose vision was at stake. Therefore, the volunteer may be more prone to discontinue the procedure. Such termination of the experiment has not been mentioned as a mental symptom. Nevertheless, the equivalent of the non-conformance is noted sometimes in reports on sensory deprivation. Solomon(5) mentions two subjects who could not wait to be released. They strove wildly to escape after indicating their desire to terminate the isolation in the respirator. In most instances, the subject indicates his desire to terminate the experiment, and his capacity to control the stress does not come into bold relief.

Our technique has turned out to be a sensitive indicator for such lack of inhibitory control. The classic sensory deprivation experiments are less so.

The transient character of the mental symptoms is consistent with the transient character of reduced awareness. The transience of many of the symptoms requires analysis. Inquiry as to the cause of this transience leads to further support for the thesis that such symptoms probably occur frequently in unrecognized periods of reduced awareness. Hypnagogic hallucinations probably induce a return to full consciousness because of the strength of accompanying emotions or movements.

Presumably, unpatching of the eyes or sitting up may do the same thing. Therefore, symptoms dependent on suppression of reality testing would readily disappear when alert consciousness returns.

So far we have pointed out the high incidence of non-conformance in our patients during sleep or hypnagogic states. Also we have given reasons for expecting this and other symptoms of sensory deprivation to occur frequently in unrecognized states of reduced awareness. Perhaps the following set of symptoms have a similar time of occurrence, although they are reported here because they have a special significance of their own.

DELIRIUM SYMPTOMS SUGGESTIVE OF SUBCLINICAL BRAIN DAMAGE

It is our impression that bilateral patching of the eyes tends to produce delirium symptoms in patients who have demonstrable or subclinical organic impairment of brain functions. The evidence from our cases, although not yet conclusive, is highly suggestive. Cameron(12) has demonstrated in senile patients with nocturnal deliria that the delirious states can be reproduced in the daytime by placing the patient in a dark room. We have seen these induced results in our patients with organic brain syndrome (both with and without a history of antecedent deliria), but more impressively in patients in whom the chronic brain syndrome is absent or suspected. In the latter cases, there may be some indications that antecedent brain damage might have occurred.

A few brief examples follow :

A 74-year-old senile man with nocturnal deliria of 6 months' duration experienced delirium while his eyes were patched following a cataract operation.

A 76-year-old male with borderline memory and emotional lability of the arteriosclerotic type, had two post cataract extraction deliria. These symptoms were reproduced in a progressively milder manner during two subsequent re-patching tests.

Of 10 patients with prolonged patching, 5 had a history of heavy drinking. None of them had a past history of delirium tremens or were currently experiencing it; none had been drinking heavily at the time; and none had a chronic brain syndrome. However, 4 of these

5 patients developed hallucinations on patching.

Seven hours after surgery for laceration of the eye, an 8-year-old boy manifested visual hallucinations, auditory illusions, somatic delusions, marked fear, gross tremulousness, and grinding of his teeth. For about 45 minutes the psychiatrist and a nurse tried in vain to comfort, reassure, and quiet him. All of his symptoms instantaneously disappeared when his good eye was unbandaged. When he closed his eyes about 5 minutes later, he suddenly sat up startled and said, "It's coming back." He was asked to open his eyes and the symptoms disappeared again. This patient was mentally retarded, at least one year. Two years previously for a period of several months, he awakened during the night and would "talk and laugh" and then have difficulty falling asleep for a few hours afterwards.

Perhaps the release of symptoms referred to above may also be manifested during periods of reduced awareness, since delirious symptoms are prone to occur at night. Here the temporary suppression of the highest inhibitory control of discriminative logic and attentive alertness may play a significant role.

MENTAL SYMPTOM FORMATION IN SENSORY DEPRIVATION

Does the finding of mental symptoms during periods of reduced awareness in our study have any significance for the basic problems in sensory deprivation? We can foresee 3 consequences.

1. It calls for a review of the sensory deprivation experiments, or a repetition of some of these, to determine the relation of all or some of the mental symptoms to hypnagogic periods.

2. It focuses attention on a new set of physiologic circumstances, those of the hypnagogic period, which need to be evaluated in the understanding of at least a number of the sensory deprivation symptoms.

3. It points to the possibility that periods of reduced awareness represent a basic substratum for the syndrome of mental symptoms produced by sensory deprivation, isolation, sleep deprivation, semi-starvation and certain toxic states.

Before concluding this discussion, it might be well to point out some of the difficulties in evaluating the significance of

hypnagogic occurrence of symptoms in the mechanism of the mental syndrome. Interpretation is hampered by unknowns.

1. *Frequency of symptoms in reduced awareness.*—We do not actually know how often symptoms occur in unrecognized periods of reduced awareness. We have indicated why we think the incidence is high. It is difficult to determine the precise incidence. Round-the-clock observation and continuous monitoring with the electroencephalograph for sleep spindles or slow waves might be helpful, but these are tedious approaches and might not yield the answer.

2. *Frequency of hypnagogic or other "reduced awareness" symptoms in sensory deprivation experiments.*—Although such periods of reduced awareness are increased by our procedure, we do not know that the same is true in the other sensory deprivation experiments. There is much reason to believe that such is the case, since the basic conditions are similar. Difficulty in concentration and reduced awareness have been reported in sensory deprivation experiments. The subjects of Goldberger and Holt (13) also slept frequently during their experiment.

3. *Etiologic significance of reduced awareness.*—Is the chief significance of our finding of hypnagogic symptoms one merely indicating time of their occurrence or is it possible that conditions peculiar to this state of half sleep—half wakefulness have etiologic significance for the manifestations? We incline to the latter point of view. The hypnagogic period is characterized by a diminution of the highest cerebral functions, e.g. discriminative thinking or logic, attention and inhibitory control. It is the absence of those functions that contribute to the lack of reality testing, the katathymic imagery, and involuntary movements of this period. The role of conceptual or symbolic deprivation may even be more important than the lack of sensory stimulation or variability of such stimuli. Although sensory deprivation tends to reduce alertness and attention, and induce hypnagogic periods, the more primary condition may be this state of reduced cerebral functioning, which can also be caused by brain disease and many other conditions. Here,

suffice it to say that in sleep deprivation when the subject is stimulated constantly to remain awake, even with the most variegated stimuli, he still develops symptoms similar to those of the sensory deprivation experiments (14). One suspects periods of reduced awareness are also increased. The common denominator for the symptom formation under conditions of both sensory deprivation and sleep deprivation may be reduced awareness rather than the diminution of sensory stimuli.

4. *Persistence of symptoms beyond return to full awareness.*—In postulating that periods of reduced awareness with temporarily impaired logical discrimination, attention and inhibition are etiologic, one must explain the persistence of symptoms after the sensory deprivation is terminated. In Hebb's experiments, EEG abnormalities and visual alteration persisted for a short time afterwards. We know that individuals vary in the degree to which they return to full alertness on first awakening. Perhaps the time of change is related to the duration of the prior sleep or hypnagogic period. There may be an analogy in some instances of animal hibernation where the longer the preceding "sleep" the greater the arousal period (15).

Further researches might concentrate on the "input disorder" subsumed under the heading of sensory deprivation, at a more central level—perhaps at that point where sensory stimuli related to the human element, to symbolic representation, are registered and differentiated. At least the peripheral emphasis suggested by the term sensory deprivation appears to be inadequate to explain some, if not all, of the symptoms produced.

SUMMARY

In our study we made 4 major observations.

1. The mental symptoms of patients whose eyes were patched bilaterally were found in a higher incidence than hitherto reported, particularly in patients with detachment of the retina.

2. We identified a new symptom—non-compliance to instructions.

3. Non-compliance occurred most frequently in our patients during sleep or on

awakening, as did also pseudo-hallucinations.

4. Surgical complications were greater in these patients undergoing cataract extraction, who developed mental symptoms during the period of bilateral patching of the eyes as compared to those without mental symptoms.

The coincidence of sensory deprivation and hypnagogic or other periods of reduced awareness may contribute to an understanding of the sensory deprivation effects. More work needs to be done. It would seem imperative to ascertain to what extent periods of reduced awareness occur with the daytime symptoms of our sensory deprivation situation and that in other sensory deprivation experiments. The higher mental functions of inhibitory control, discriminative logic, and both vigilance and tenacity of attention are impaired during periods of reduced awareness. The deliriod symptoms which became manifest in our patients who had brain damage in addition to their eye disease are probably also precipitated more readily at times of reduced alertness.

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CONTEMPORARY CONVERSION REACTIONS A CLINICAL STUDY¹

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As psychiatric consultants in the medical department of a large general hospital, we have seen a substantial number of patients in whom the primary diagnosis was conversion reaction. In view of the changing concepts of conversion mechanisms, and the suggestion that the pattern of symptomatology changes with the cultural milieu (1), we considered that an analysis of our current experience would be of some general interest. The term "conversion" was coined by Freud (2) in 1894; but, as historians such as Zilboorg (3), Temkin (4), and Osler (5) have noted, present concepts of conversion reactions derive not from Freud or Charcot (6) but from an English surgeon, Sir Benjamin Brodie (7). Brodie, as early as 1837, broadened the Hippocratic conception of hysteria to include arthralgias and other somatic symptoms which have no evident organic basis, and stated that "fear, suggestion, and unconscious simulation are primary factors."

The diagnoses of the patients on whom we report were made as indicated by the current Diagnostic and Statistical Manual, i.e., classifying by "the immediate condition which led" to consultation and the predominant clinical findings on psychiatric examination. In all cases, the patient's chief complaint consisted of at least one relatively prominent somatic symptom for which there was no apparent anatomical or physiological basis, and for which, on psychiatric examination, there was evidence that the symptom was psychologically or emotionally derived. Criteria in support of a positive psychiatric diagnosis included the temporal correlation of the onset or exacerbation of the symptom with emotionally significant events, the patient's attitudes about the symptom and apparent use of it,

and the history of presumed earlier conversion symptoms and personality. In the absence of structural or physiological disorder, and with corroborative findings on psychiatric examination, we regarded a somatic symptom as the result of "conversion," i.e., the unconscious process in which the patient's actual problem or dysphoric affect is symbolically converted into a somatic symptom. We therefore have a broader operational model of the term "conversion reaction" than the restricted classical one of "loss of function," although we did carefully exclude psychophysiological disorders, dissociative reactions, overt depressive reactions, and diffuse and vague hypochondriacal syndromes from our series of patients.

The raw data for this report are the records of 134 consecutive patients diagnosed as conversion reactions when seen in consultation by 2 of the authors at the Johns Hopkins Hospital during the last 4 years. They included both inpatients and outpatients, from both ward and private services. The mean age of this entire series was 39.5 years, with a standard deviation of 13.1 years and a range of from 14 to 67 years. One hundred and ten (82%), of the patients were females and 24 (18%), were males; by comparison, in our total consultation experience, about 40% of our patients were males. This percentage of male conversion reaction patients approximates earlier reports (8), but is at variance with the report of Robins, Purtell and Cohen (9, 10), who concluded that conversion reactions do not occur in men except in a compensation setting. Compensation factors were only apparent in 4 of our 24 male patients; in the remaining 20 male patients the conversion syndromes and processes seemed to bear no essential dissimilarity from those of the females in our series.

CLINICAL ASPECTS

At a descriptive level, we first must consider those aspects of conversion reactions

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associated with the restricted classical formulation of conversion hysteria as "loss of consciousness, memory and/or motor function" and the equally classical "hystero-epilepsy" (Charcot's (8) "major hysteria"). The following patients exemplify these clinical aspects.

Case 1.—As an example of the classical "loss of consciousness" syndrome, a 34 year-old woman had been brought to the hospital with quadriplegia and asphyxia from the neck down, of several hours duration. A tracheotomy was performed in the accident room (without anesthesia, since her sensory level was above that of the tracheotomy incision) because of the patient's impression that she had a rapidly ascending paralysis with imminent involvement of the respiratory center. By the next day, her symptoms had essentially disappeared.

Case 2.—As an illustration of Charcot's "grand hysteria" or "hystero-epilepsy," a 32-year-old single man had a one year history of episodic and frequent attacks of breathing difficulty, which were accompanied by clonic pelvic thrusting movements. These attacks began almost immediately after he discovered that his mistress had another paramour. In the attacks, he would exhale forcibly, appearing to have the wind knocked out of him, following which the pelvic thrusting movements would begin.

The next clinical aspect of conversion symptoms which we wish to describe is that of simulation of symptoms of known organic disease patterns. The quality of the simulation varies a great deal and, in the following case, was done with relative expertness.

Case 3.—A 40-year-old housewife was seen on the semi-private medical service. During an episode of weakness, paraplegia and ptosis five years prior to this, it was found in another hospital that she responded to prostigmine, and myasthenia gravis was diagnosed. Weakness had continued and she spent most of the next two years in bed. She applied to an internist (whose research in myasthenia gravis was well known) for further evaluation and was then admitted, having been on prostigmine for five years. She complained of generalized weakness and ptosis, and specifically of weakness in one leg. It was found that she did not have myasthenia gravis currently, and it was considered that the diagnosis had been erroneously made in the past, although the possibility that she was "in remission" could not be totally excluded.

It was learned that her early life had been very traumatic, unstable, and confusing (as an infant, she was given to an aunt to raise), and she had always relied chiefly on cuteness and lustronics to get along with others. She had been hospitalized briefly for a psychotic episode following one of her pregnancies. She was concerned that she did not look her best "for" the consultant when first seen. She declined psychiatric treatment and, at her request, was discharged by the internist on low doses of Mestinon. Three years later, she contacted the psychiatric consultant again, stated that she was still doing well with her physical symptoms but was still taking Mestinon. She complained that she was getting "too bitchy and impossible at home," and requested treatment for her temper tantrums. She was referred to a private practicing female member of the staff, whom she contacted but at the moment does not feel she can afford to work with.

Reconstructing her history, her initial concepts of myasthenia gravis seemingly evolved during her contacts with the physician who first diagnosed it and, in a sense, the symptoms could be considered iatrogenic. An unusually "other-directed" person, she, we feel, responded to his interest in the possibility of a "fascinating" disease, and thus symptomatology was shaped by history taking. As the clinical syndrome emerged from these negotiations, the physician gained a fascinating patient, while the patient gained a fascinated physician.

Next, we wish to give a clinical example of a pain syndrome that we consider to have been a conversion reaction. The importance of this aspect of symptomatology is reflected in the fact that pain was the primary complaint in 75 of our 134 patients.

Case 4.—A 60-year-old scrap weigher for a large corporation was seen in consultation because of complaints of abdominal pains of 9 months duration. Extensive diagnostic work-up elicited no organic or psychophysiological abnormalities. A childless man who had lived in a rented home for years and whose chief interest had been in fixing it up, his abdominal pains began after the owner of the house had died, at which time he and his wife became very concerned about having to move and losing their investment in the improvements they had made. He also felt that his job was threatened at that time, and, in addition, a relative had just died. Clinically, he showed minimal signs of depression consisting of slight

weight loss and some insomnia, both of which he attributed to "the pain." He declined psychiatric outpatient treatment, feeling that his illness just was not diagnosable. One month later, he was seen in an affiliated hospital after he had made an apparent suicidal attempt by inflicting 30 to 40 slashes on his abdomen, arms, and legs. Following surgical treatment, he continued to complain of pain, was increasingly agitated, and was finally transferred to a state psychiatric hospital.

The last clinical aspect to which we call attention is that the clinical picture is sometimes mixed. That is to say, there may also be symptoms related to underlying physiological or structural abnormalities in addition to the predominating conversion reaction. An example of this was a 29-year-old, married woman with structural disease of the nose and throat, psychophysiological symptoms compatible with anorexia nervosa, frequent overt anxiety and hyperventilation, and conversion facial pain.

DISCUSSION

From the vantage point of current medical knowledge, the classical symptoms of "loss of function" or "hystero-epilepsy" seem relatively primitive, transparent, and easy to diagnose (although the relativity of this observation is illustrated in *Case 1*, the anesthetic patient who was dramatically misdiagnosed by a medical intern but not by the resident). In our experience, these patients are apt to come from comparatively backward rural areas, where there is greater cultural acceptance of these symptoms. Patients illustrating the "classical" aspects of conversion symptomatology do, in a sense, simulate organic disease processes as they conceive them, but in a relatively crude manner commensurate with their lack of medical sophistication. At the other end of this spectrum, we observed patients from sub-cultures in which medical education and sophistication were highly developed and who expertly simulated complicated disease entities; e.g., our series included 2 physicians, 2 nurses, and 2 neurologists' secretaries (one of whom simulated multiple sclerosis, while the other simulated symptoms associated with a cyst of the third ventricle). The existence of patients who are "expert simulators" is vivid evi-

dence that conversion symptoms conform to the patient's imageries or ideas about a suspected disease. In many ways, the span between the "backward" and "sophisticated" sub-cultures of today is analogous to the time span in the evolution of medical knowledge between the late 19th century and the mid-20th century; we postulate that the difference between the conversion reactions of that day and this is comparable to the observed differences between our patients of contrasting sub-cultures. We conclude that conversion reactions are molded by unconscious simulation of disease entities, and that symptom patterns change with changing medical knowledge of the patient and of his cultural milieu. The acceptability of the patient as a sick person hinges on lack of gross discrepancy between his symptoms and the prevalent medical concepts of his society. No sharp division between "classical, primitive" and "expert simulation" patterns can be made, and it would be meaningless, therefore, to use these concepts as mutually exclusive categories, with so many patients in each.

It is of special interest that, at the turn of the century, Möbius(11) stressed the concept that hysterical symptoms were determined by the patient's ideas about disease, and Babinski(12) elaborated the concept of simulation of disease (which he called "pithiatism" to embody the notions of "aping" or imitating, and of suggestibility). Babinski also stressed the influence of history-taking upon the symptomatology. Similarly, we found that, in medically sophisticated patients, the imageries of the patient and those of the physician about a suspected disease were not widely divergent, and, in fact, often tended to converge more during the process of clinical investigation. To other patients with less medical knowledge initially, the physician sometimes communicated his conception of and interest in a suspected disease during the early "disorganized" phase of illness described by Balint(13), thus iatrogenically shaping symptoms. Differential diagnosis is sometimes a problem in our day as it was in Sydenham's(14), who said: "Hysteria imitates almost every disease which befalls mankind. Whatever part of the body it attacks, it will create the proper symptom

of that part. Hence, without skill and sagacity the physician will be deceived."

As we previously noted, the type of symptom with which our patients most often simulated known disease entities was that of pain. Our findings, then, are similar to those of Fenichel, Keane and Cohen (5), who found that pain was the conversion symptom most often clinically encountered. Although pain was not mentioned as a symptom of hysteria by Charcot (6) and Janet (16), we feel that our clinical data support the inference that pain is often the somatic representation of an affect. Fenichel (17), Engel (18) and Szasz (19) have described important aspects of the psychological significance of this symptom. We do feel that perhaps there is some qualitative difference between the pain syndromes and other conversion reactions, in that the pain syndromes represent disguised, but nevertheless verbalized appeals for help, in sharp contrast to the relatively unexpressed appeal implicit in "loss of function" syndromes in which the symptoms speak for themselves.

Another important factor in shaping symptoms, in addition to the closely inter-related ones of identification and simulation, is that of the symbolic transmutation of specific unconscious conflicts and affects. The patient's final choice among available identification models and illnesses to simulate, we feel, is partially determined by the symbolic requirements of the particular conflicts and affects with which he is coping. The symbolic meaning of many of the symptoms in our clinical illustrations was apparent; for example, in a patient with simulated multiple sclerosis, the intolerable restrictions implicit in an unwanted pregnancy were represented by feelings of shackles around her ankles, while the weakness of her arms precluded holding a baby. The importance of distinguishing between "meaning" and "cause" of symptoms has been emphasized by Whitehorn (20). It hardly seems necessary to elaborate further on the importance of the symbolic meaning of symptoms, especially since this aspect of conversion reactions has received so much attention in recent years.

ASSOCIATED PSYCHOPATHOLOGY

Depressive features were present, although overshadowed by conversion symptoms, in 40 of our 134 patients. In many more patients, a history of antecedent separation experience led us to infer the presence of underlying depressive affect, effectively masked by the conversion symptoms. We also found, as perhaps would be expected, that the 40 patients with associated depressive features were not distributed at random throughout our population of conversion reactions, but were shifted upwards in age to a highly significant degree ($p < .0001$), with a mean of 46.9 years and a standard deviation of 11.8 years (compared to a mean of 36.4 years and a standard deviation of 12.3 years for the remainder of the series). The pain syndromes tended to be associated with those patients having some evidence of depression. It was our impression that the pain was often more severe in the older patients, partially or completely masking signs of depressive illness; in these cases, suicidal risk was often considerable.

Pursuing further the relationship between conversion symptoms (especially pain) and depression, we reviewed 100 unselected cases with the primary diagnosis of depressive reaction, who had been seen in the same setting by the same 2 authors. In this group, we found that prominent conversion features had been noted in 28 patients (i.e., conversion symptoms were present, but were overshadowed by overt clinical depression), and, in these depressed patients, the conversion features almost invariably included pain. The mean age of this group of 100 primarily depressed patients was 46.5 years, with a standard deviation of 12.1 years, which closely approximates the corresponding statistics of the depressive sub-group of conversion patients.

In a study by one of the authors (21) of patients with a history of acute brucellosis, the development of a chronic syndrome, so called "chronic brucellosis," was positively correlated with the concomitant presence of potentially depressing life situations. Most of the chronically symptomatic patients denied emotional problems and considered whatever depression they expe-

rienced as secondary to symptoms such as fatigue and somatic pain, which were attributed to an allegedly persistent infection with brucella. There was strongly suggestive evidence that this preoccupation with somatic symptoms had a self-esteem supporting function.

Conversion reactions, then, may be used as defenses against more overt depression, which may thereby be obscured. Even when depression predominates, however, conversion reactions may still be defensively employed.

We further noted clinical evidence strongly suggestive of an underlying or incipient schizophrenic process in 19 of the 134 patients. The mean age of 32.7 years, with a standard deviation of 9.8 years, is significantly lower ($p < .01$) than that of the remainder of the group (the mean of which was 40.7 years, with a standard deviation of 13.2 years), and lower than that of the depressive sub-group to an extremely significant degree ($p < .0001$). The delineation of these 2 sub-groups of conversion reaction patients reminds us of the theoretical constructions of Fairbairn (22), which postulate a "depressive" or "schizoid" substratum to neurotic and characterological symptomatology.

A significant number of our patients were adolescents. The occurrence of conversion symptoms in childhood (23) and in adolescence (24) has been discussed by others, and conversion hysteria was formerly considered a disease with onset in adolescence. Only 2 of our adolescents had evidence of schizophrenic tendencies, and only one had clinical evidence of depression. In all of our adolescents, we were impressed with problems of shifting roles and of identifications with conflicting groups ("identity diffusion" as described by Erikson (25)), resulting in interpersonal difficulties involving dependency and sexual issues. We felt, then, that the adolescent group of patients presented more or less distinctive and unique underlying psychodynamic problems when compared to the remainder of the series; we suspect, however, that as these patients grow older, their failure to settle into stable, ego-satisfying interpersonal roles may result in a propensity for anxiety and depression, which in turn

might be defended against with conversion symptomatology.

Not all of our 134 patients were accounted for by the 3 groups just discussed. In a large number of our remaining patients, the standard formulation of conversion as a defense against potential neurotic anxiety seemed to apply. There was, in fact, clinical evidence that the situations in which these patients found themselves were ones which might ordinarily engender neurotic anxiety, and that the anxiety was circumvented by the defensive use of conversion symptoms. In the consultation situation, the inference of masked anxiety, masked depression, and masked incipient schizophrenia could only be made from case to case with varying degrees of precision, so that we did not attempt to delineate these groups statistically. Our data are compatible with the view point that conversion reactions are used as ego defenses in at least 4 different situations: those of adolescent ego-identity difficulties, depressive affect, incipient schizophrenic disorganization, and neurotic anxiety. It is entirely possible, of course, that these 4 categories do not complete the list of situations and psychopathology associated with conversion reactions.

Phenomenologically, conversion reactions in general enable the patient to avoid or reduce affective distress by substituting fantasy-endowed and symbolically expressive somatic distress or dysfunction. In this way, an intolerable affective problem may apparently be "converted" into a face-saving physical-medical one, in which the patient shifts the responsibility for remedial action from himself to others, including the physician. The ensuing "secondary gains" (which Laughlin (26) terms "epigain") then often become a perpetuating factor. Parenthetically, we should add that we have also observed the substitution of fantasied neurotic distress for real somatic distress in occasional patients who deny catastrophic illness (i.e., malignancy) by attributing their ill health to emotional problems; this process, in a sense, is the inverse of the conversion reaction process.

PERSONALITY AND DEVELOPMENTAL CONSIDERATIONS

Less than one-half of our conversion patients were so called "hysterical char-

acters," and we therefore agree with Chodoff and Lyons(27) and with opinions expressed in the recent panel discussion of the American Psychoanalytic Association meeting(28) that this personality pattern is not a prerequisite for the conversion process. In spite of efforts(27, 29) to delineate clinically the "hysterical personality," this term connoted such a scattered constellation of personality traits that it does not seem suitable to nosological use. In its non-professional usage, the word "hysteria" itself ordinarily denotes "emotional incontinence"(30), and probably we should graciously relinquish the term to the laity altogether. We concur with Erik Erikson(31) and with Henderson and Gillespie(32) that histrionic traits are at the core of the so called "hysterical personality"; and we therefore suggest that the term "histrionic personality" would be distinctly preferable by virtue of being relatively specific and meaningful. Whitehorn(30, 33) has suggested that, while all human beings may be conceived of as playing roles, the histrionic personality does so in an unconvincing way which calls attention to his role playing; it is as if the role just does not quite fit and "shows" in the manner that a woman's slip "shows." In the histrionic personality, the role playing shifts and varies conspicuously with cues from the audience of the moment, indicating an inability to maintain stable personal and social identities; Akerman(34) has described various aspects of this phenomenon. This sensitivity to cues as reflected in shifting roles underlies the so called suggestibility of these people, and is of crucial importance in the doctor-patient relationship, as described above.

Immaturity and dependency are often ascribed to patients with conversion reactions and histrionic personalities. One tangible issue developmentally related to immaturity and dependency is that of ordinal position in the family. Ordinal position was one aspect of development recently studied by Sears, Macoby and Levin(35) and some of the implications of sibling position have been discussed by Montagu(36), Wahl(37), and others. Ljungberg(38) investigated sibling position in patients with "hysterical conversion"

symptoms in Sweden (because Kraepelin in 1915 had quoted Aschaffenburg, who had asserted that hysterical patients were often *Spätlinge*), and found no correlation. We had been impressed with the frequency of the story that the patient was the "baby girl" or the "baby boy" or just "the baby" of the family. We hypothesized that patients with conversion reactions were significantly often the youngest, or the youngest of their sex in the family. We investigated the sibling position in a group of 100 consecutive patients belonging to the present series of conversion reactions. The hypothesis that patients with conversion reactions had been the youngest child in their families more frequently than if chance alone were operating was confirmed within the $.05 < p < .01$ level (p was approximately equal to .045). The hypothesis that patients with conversion reactions had been the youngest of their sex in their families more frequently than if chance alone were operating was also confirmed within the same range; in this case, " p " was calculated to be approximately .015. In both instances, approximately 35% more patients were in the hypothesized position than would have been predicted by chance.³

We found, then, that the frequency of these ordinal positions was significantly elevated in our series of conversion reaction patients. We do not, at this time, have

³ The authors are indebted to Dr. John W. Shaffer, Dr. Daniel Wilner and Professor Jerome Cornfield, of the Johns Hopkins University Schools of Medicine and of Hygiene and Public Health, for statistical advice and criticism. Dr. Wilner specifically suggested the method for computing the number of patients expected by chance to be in the last position of each different sibling size group. Professor Cornfield suggested the method for computing X^2 for each hypothesis by the following formula:

$$X^2 = \frac{\left[\sum \frac{n_i^2}{i-1} \left(\frac{p_i - 1}{i} \right)^2 \right]}{\sum \frac{n_i^2}{i-1}} \quad \frac{\left[\sum \left(\frac{r_i - n_i}{i} \right) \left(\frac{i^2}{i-1} \right) \right]^2}{\sum \left(\frac{i^2}{i-1} \right) (n_i)}$$

where " i " equals the number of children (or of children the same sex as the patient for the second hypothesis) in each family group, " r_i " equals the number of patients observed in the last position for each given " i ," and " n_i " equals the number of patients who were from family groups of each " i ."

comparable data on other categories of patients we see in consultation. In many individual conversion reaction patients, other "special role" positions seemed to play a part in the genesis of predisposition. A number of our patients had been the oldest of their sex, and often had been singled out by the parent of the opposite sex as their particular favorite. For example, one patient, the sixth of 11 children but the oldest of 3 girls, remarked that "of course," she was "daddy's favorite after all those boys." If they were in other family positions, circumstances would often create a special role. One middle sister whose mother had died when she was 13, and whose older sister had already left the home, became the "lady of the house" and had very complicated feelings about her relationship with her father.

From these data and observations, we are inclined to wonder if, in our culture, certain special developmental family roles correlate with later difficulty in assuming and maintaining mature social roles. In passing we might speculate about various possible versions of role enactment problems in our 4 sub-groups of conversion reaction patients. The neurotic anxiety sub-group may be thought of as fearing retribution for assuming a particular role. The sub-group with underlying depression may be attempting to cope with failure or disruption of an established pattern of role enactment. The shifting roles and allegiances of the adolescent sub-group reflect their identity problems, and the latently schizophrenic sub-group may be manifesting a rather stubbornly negativistic reaction against being pressured into an expected role (30). The gap between our data on ordinal role and possible later aspects of social and personal role difficulties points to the need for further investigation in this area.

THERAPEUTIC CONSIDERATIONS

Although the psychiatric consultations were often useful to the internists as part of their diagnostic appraisal of patients, we are unable, nevertheless, to report impressive therapeutic success with our group. The "refractoriness to psychotherapy" noted by Brown and Pisetsky (39) usually took

the form, in our patients, of continued insistence that their problems were physical and not emotional or psychological. A surprisingly bright farm wife chided the consultant that her back pain was "immotional and not emotional." Any obvious anxiety or depression was rationalized by the patients as secondary to alleged organic disease, and most refused psychotherapy even on a tentative trial basis. Because of this relative invulnerability of the conversion defenses, collaborative efforts to shift the medical investigation to psychiatric treatment often resulted in the patients seeking help elsewhere. This fact, we think, sometimes becomes apparent to internists and other physicians, who may then stop referring this type of patient. For these reasons, psychiatrists engaged in liaison work in medical departments, where patients are intensively studied, have a relatively greater opportunity to see and study these patients than do psychiatrists otherwise situated.⁴

Occasionally we were able to avoid a direct clash with the patient's somatic defense by using a somewhat oblique approach. Those few patients who did elect psychiatric treatment, especially psychiatric hospital treatment, did relatively well. Ideally, we think a larger proportion of conversion reaction patients could be persuaded to enter, and could be improved in, convalescent wards in general hospitals, where the somatic defenses would not necessarily be challenged so abruptly that the patient leaves treatment. In such a therapeutic milieu, the obvious presence of convalescent medical and surgical patients becoming rapidly re-interested in non-somatic matters could, we expect, exert strong social pressures toward improved functioning and symptom remission. In this setting, those patients who are potentially able to use individual psychotherapy could gradually be helped to discover this fact.

⁴ In this connection, the present series of conversion reaction patients constituted 13% of the consultative experience of the two authors concerned, whereas, in contrast, the Outpatient Department of the Henry Phipps Psychiatric Clinic of the Johns Hopkins Hospital reported that only 3% of the patients "terminated" during the year ending June 30, 1958 were diagnosed as conversion reactions.

SUMMARY

1. Our operational criteria for the diagnosis of conversion reactions are discussed, and an analysis of a series of 134 consecutive patients so diagnosed is presented.

2. From our contemporary point of view, 4 clinical aspects of the conversion reaction phenomenon are discussed and illustrated. These clinical aspects are: a) "classical" symptom patterns of "loss of function" and "hystero-epilepsy," b) simulation of known organic disease entities with varying degrees of expertness, c) symptom patterns in which bodily pain is a predominant feature, and d) symptom aggregates in which conversion symptoms are intermingled with those of an organic and/or psychophysiological nature.

3. In addition to patients evidencing the well-known relationship between conversion mechanisms and neurotic anxiety, in our conversion series there was a group of 40 patients with clinically evident features of depression, a group of 19 patients with clinical features of incipient schizophrenia, and a group of adolescents with characteristic ego identity problems. These subgroups were not randomly distributed within the parent group, but had significantly different parameters. We conclude that conversion reactions serve to reduce or avoid less tolerable depression, neurotic anxiety, the threat of psychotic disorganization, and the painful affects associated with adolescent ego identity problems.

4. Less than one-half of our conversion patients could be considered so call "hysterical personalities." We prefer the term "histrionic personality" to "hysterical personality," since the former calls attention to the essential characterological feature, i.e., a propensity for transparent dramatization.

5. It was found that a significantly greater proportion of our patients had occupied the position of the youngest child, or the youngest child of one sex in the family than would have been expected by chance alone. It is postulated that these and other "special person" relationships within the family group in early life may lead to difficulties in role stabilization in later life.

6. The majority of our patients regarded

themselves as organically ill and a direct recommendation of psychotherapy was usually rejected. A more oblique therapeutic approach was sometimes effective. The potential therapeutic usefulness of a convalescent ward in a general hospital is suggested.

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DISCUSSION

MARGARET C. L. GILDEA, M.D. (St. Louis, Mo.).—This paper presents a number of interesting points for discussion. It has always impressed me that a hysterical symptomatology is a superficial manifestation, one variety of "acting out," and practically always is covering some much more fundamental disorder. These authors make a good case for the basic dichotomy of personality, similar to formulations made by many different psychiatric philosophers including Jung, who separated sheep from goats, extroverts from introverts. Here Fairbairn is quoted as postulating a dichotomous substrate, depressive or schizoid. Rosenszweig calls these directions in the personality extrojective or introjective.

The first case presented is especially impressive : the patient who showed no apparent depressive tendency on examination even though a suicide attempt had been made. The second attempt was successful. It seems to me that one must postulate depressiveness in a case of that sort even if one doesn't observe it.

The authors formulate four kinds of basic disorders of structure in personality which conversion symptoms may be used to defend against. Depressive and schizoid, adolescent ego problems, and lastly, neurotic anxiety. These are not really so clearly divisible in my mind as the authors make them appear. The neurotic anxiety of course appears in the other categories. The problems of adolescence might be put into a separate category but they also can be considered as based on depressive or schizoid problems.

The term suggested by Whitehorn, the histrionic personality, conveys an immediate sense of the shallow, largely unconscious form of acting-out, that hysterical symptoms betoken. This is similar to the Jungian concept of "persona," which describes the mask the person puts on to fill his role. In this histrionic individual the mask is wearing the person, rather than the person wearing the mask.

I am very interested in individual family patterns and conversion symptoms. I have interviewed Mr. A. D. B. a member of the St. Louis group and observed that symptoms of hysterical blindness had occurred more frequently in women and only children. These authors have not included the only element in their analyses, however the family factors I believe are at work. Any child who has the special burden put on him of responding to the role demand. The intensity and molding power of the role expectation of the parents has an **impelling** and determining effect on the developing personality structure of the child.

I am particularly interested in the subject of male hysteria since Dr. Eli Robins is a member of our department. The famous work on hysteria from the Massachusetts General by Purcell Robins, *et al.*, defines "hysteria" in males as a totally different illness, or symptom complex, from hysteria in females. It is of course different, just as any manifestation of the male is different from an analogous manifestation in the female, but I am quite confident that this condition exists, and am glad to see it demonstrated in quite a large group in this study.

I have certainly seen some in clinical practice. I treated a man 15 years ago with spastic torticollis, and pain in the neck, with a clearly psychogenic basis. Ten years later I saw this man again. The torticollis had cleared up, but he was suffering from conversion symptoms in the abdomen, this time simulating peptic ulcer. Purcell and Robins postulate that there is a compensation factor present in male hysterics which

is different from the factor of secondary gain which one practically always can demonstrate in hysterical females. In this particular case the compensation factor and the secondary gain I thought were identical. The symptom helped this man to deal with problems with his wife and business. I believe this is exactly the same motivation of many symptom patterns in women.

I feel that these authors have taken a somewhat too pessimistic view of the treatment potentialities of the hysterical patient. They have apparently had the experience of seeing these patients fresh from medical clinics or medical services. The patient has probably been referred with a statement something like: "Your symptoms are nothing but . . .". As a matter of fact I have often seen a statement of this sort coming from a referring physician serve to relieve the symptom which had brought the patient in for study. Sometimes another symptom appears; other times the patient may get on for a time with no further symptoms. We should not ignore the fact that this form of "reassurance," (or disparagement of the symptom), sometimes has a curative effect. In my own practice I have found hysterical symptoms were as easy to treat as any of the defense mechanisms which the individual chooses to protect his self-esteem and personality with, and far easier to treat than phobic or obsessive defenses. I do certainly agree with these authors that the treatment of choice for the major hysterics is milieu therapy, combined with group and personal psychotherapy, when possible. I am especially impressed with the value of the therapeutic community to individuals who are crippled with hysterical personality patterns.

THE ACTION OF PSYCHOTOGENS AND A NEUROPHYSIOLOGICAL THEORY OF HALLUCINATION¹

AMEDEO S. MARRAZZI, M.D.²

The use of the psychotogens that are related to the naturally operating cerebral neurohumors, offers real possibility of supplying a rational basis for an experimental psychiatry, whose aim is to reproduce a reasonable semblance of clinical psychosis and study and manipulate it, so as to better understand and cope with naturally occurring psychosis. This is possible through the use of substances such as mescaline and lysergic acid diethylamide (LSD-25), which are capable of producing at will reversible, "chemical psychoses" including hallucination in varying degrees. Such an approach tests the logical assumption that the hallucinatory manifestations exhibited by a variety of naturally occurring psychoses as well as the experimentally induced ones share much in common in the way of neural pathways and mechanisms, despite the fact that the psychoses mentioned are far from one and the same.

Perception is distorted when it fails to match reality. This implies continuous scanning of sensory inputs and comparison with past experience or memory. Thus a mismatch normally would cause the input to be judged unreal, while failure of proper judgment would result in illusion or, when the sensory inflow arises endogenously, in hallucination. A dissociation from reality, therefore, might in fact represent a dissociation between the parts of the brain responsible for handling information. The nature and site of such processes and their disturbances would be expected to play important roles in the nervous system in health and disease. Since hallucination is often a prominent feature in psychosis, an analysis of the hallucinatory mechanism is of vital interest equally to the experimenter and the clinician. Characteristically, such a question begins and, with helpful inter-

mediate steps utilizing other species, ends in man.

The brain can be looked upon as a communication and information handling system. The simplest significant unit in such a system is therefore, one that can handle the simplest message. In experimental animals this can be conveniently studied and measured by sending in an electrical message and recording electrically the output at the synapse. The characteristics of synaptic function, its distortion and restoration can be discovered and understood by experimentally changing the chemical environment of the synapse. A suitable simple pathway that we have utilized extensively in working with animal counterparts of the actions of psychotogens has been the transcallosal pathway connecting symmetrical points in association areas of the optic cortices of the two halves of the cat's brain(1), Fig. 1. On initiating a test impulse (electrically) in one optic cortex, the output message from the terminal synapses in the contralateral cortex is recorded by a surface electrode. By introducing the chemicals that act as tools in analyzing brain function, directly into the blood supply to the brain through the common carotid artery, we succeed in achieving an effective concentration in the cerebral hemisphere on the same, injected side with almost no other complicating effects, since dilution in the general blood stream lowers the drug concentration to a level that is inadequate for actions elsewhere. In this way we have shown in the cat brain, that serotonin(2), adrenaline and noradrenaline(1) are neurohumoral inhibitors at cerebral synapses and that mescaline, LSD-25, and bufotenine which are chemically related to these cerebral inhibitory neurohumors, have the same kind of cerebral synaptic inhibitory action(3,4). This has led us to the theory that a disturbance of the equilibrium between neurohumoral inhibitors and excitors causes cerebral dysfunction and that the chemical psychotogens, mescaline, LSD-25, and buf-

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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oteneine, by adding to the inhibitory influences created just this kind of distortion of the synaptic chemical environment with consequent dysfunction manifested by symptoms characteristic of psychosis.

The pertinence of these findings to clinical psychosis is attested to by the fact that the clinically effective tranquilizers, as would be logically predicted, prevent the synaptic impediment produced by psychotogens in our experimental animals (4, 5, 6).

The question now becomes: how does excessive or abnormal cerebral synaptic inhibition account for mental disturbance and specifically for hallucination? However, before proceeding with this, we must compare our data with a reported synaptic exciting action of LSD-25 (7). Upon whether we can reconcile such apparently contradictory data depends whether we may consider a unitary or a dual hypothesis to supply a mechanism for hallucination.

This requires the further inquiry into the possibilities of relating units into meaningful neurophysiological patterns, whose perversion by psychotogens and restoration by tranquilizers suggests that they are the basis of the behavioral patterns that have become abnormal. In the visual system, as in the other sensory modalities, the inflow after passing through a subcortical relay station (here the lateral geniculate) divides into a main stream passing on as a main inflow to the primary cortical receiving areas and another stream through diffuse projections to association areas such as the ones interconnected by the transcallosal pathway described above. This is schematized in Fig. 2. It is the integration of the primary afferent inflow with the feed back from the signals simultaneously received in the reference or association areas that results in the ultimate perception of the environment and its stimuli.

It is possible by appropriate placement of stimulating and recording electrodes to study and compare the two kinds of areas primary and reference, or association which have already been distinguished histologically (8) by the richness of the dendritic type synapses (D_1 , Fig. 2) in the association and the somatic (S_2) in the primary receiving areas. Fig. 3 shows that indeed in our hands (9), as well as reported elsewhere

(7), chemicals can appear to have different actions on the two sites, so that synaptic inhibition in the reference areas may be accompanied by enhancement in the primary pathway. This last is illustrated when stimulating the optic radiations and recording from the primary receiving cortex. This curious pairing of inhibition in the reference and enhancement in the primary areas is found with moderate doses of all the synaptic inhibitors we have mentioned, including the neurohumors and the psychotogens. However, it is not an inevitable relation between chemical effects on the two areas, since anesthesia in the form of pentobarbital depresses both areas in a parallel fashion.

Further pursuit of the question has presented us with both the answer and a concrete set of examples of the mechanisms we believe responsible for the kinds of mental disturbance represented by chemical psychosis and for certain group of hallucinatory phenomena. By simultaneously activating with test impulses the visual primary and reference system and recording the electrical responses from the appropriate cortical sites, we have analyzed the manner of action of LSD-25, Fig. 3, and the influence upon it of the interruption of a pathway carrying impulses from the cortex restraining the subcortical relay through which the visual inflow must pass. The interruption is accomplished by a lesion in the lateral geniculate which is the subcortical relay.

The left hand panel of the typical data presented in Fig 3 shows that for LSD-25, inhibition in the transcallosal is accompanied by increase in potentials (downwards instead of upwards because of special recording conditions) in the primary or radiation system. After the lesion the results in the right hand panel show that the transcallosal system remained unaltered but LSD-25 now inhibits also in the primary system.

The conversion from apparent enhancement to inhibition in the primary system reveals that the true nature of the synaptic action of this group of psychotogens is actually inhibition, in this instance of the cortico-geniculate restraining pathway thereby releasing the subcortical relay and faci-

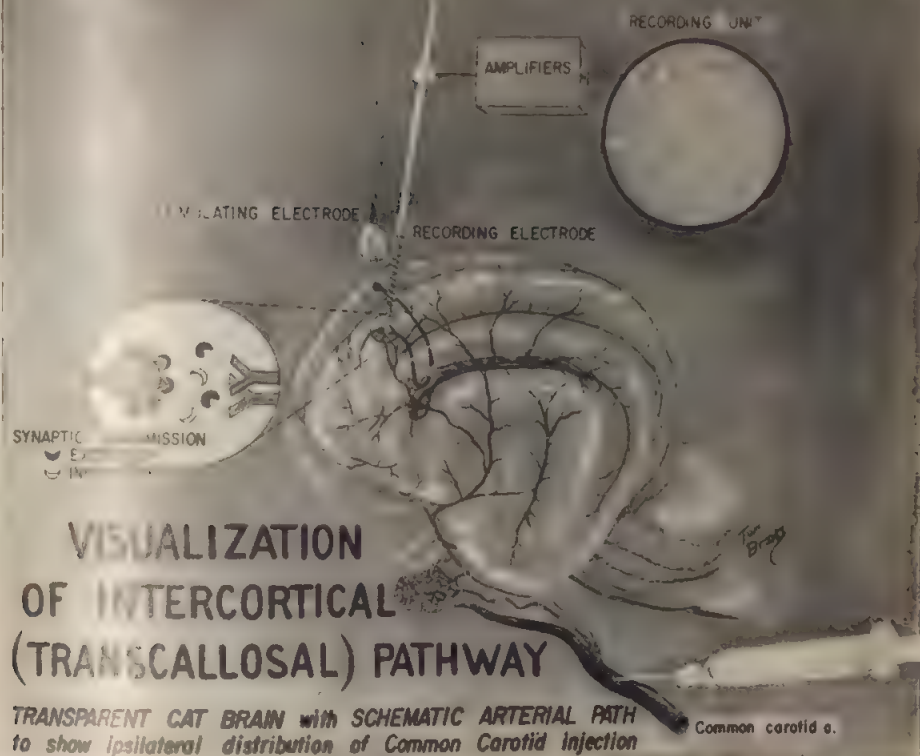
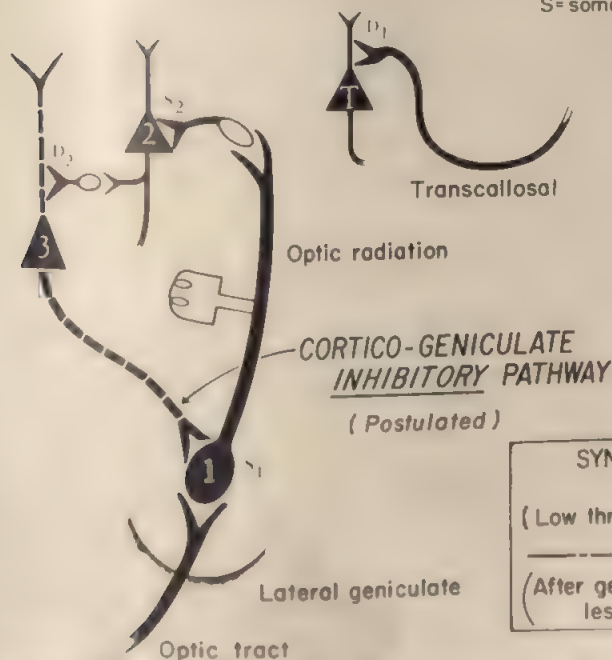


FIG. 1

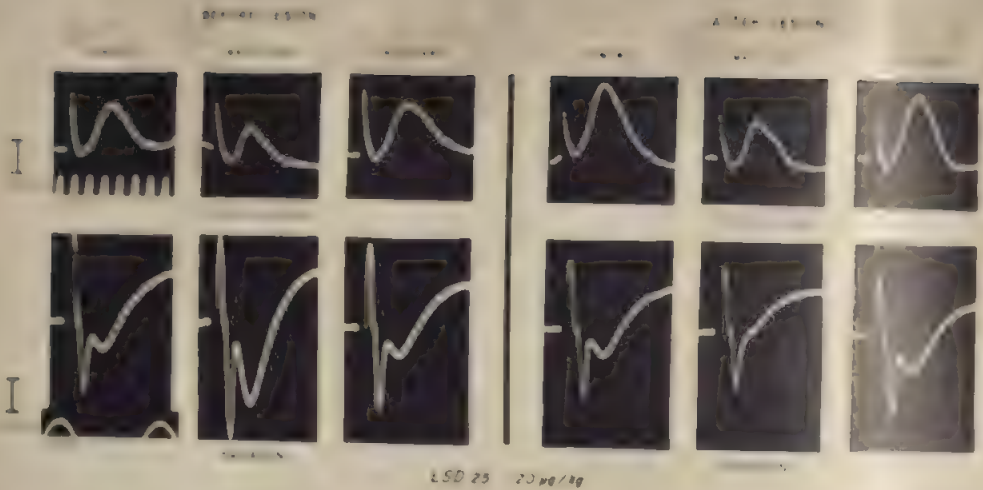
D= dendritic synapses
S=somatic synapses



SYNAPTIC INHIBITION	
(Low thresholds)	D ₁
	D ₂
(After geniculate lesion)	S ₂

SCHEMATIC PATHWAYS TO ILLUSTRATE RELEASE PHENOMENON FROM DENDRITIC SYNAPTIC INHIBITION IN OPTIC SYSTEM...

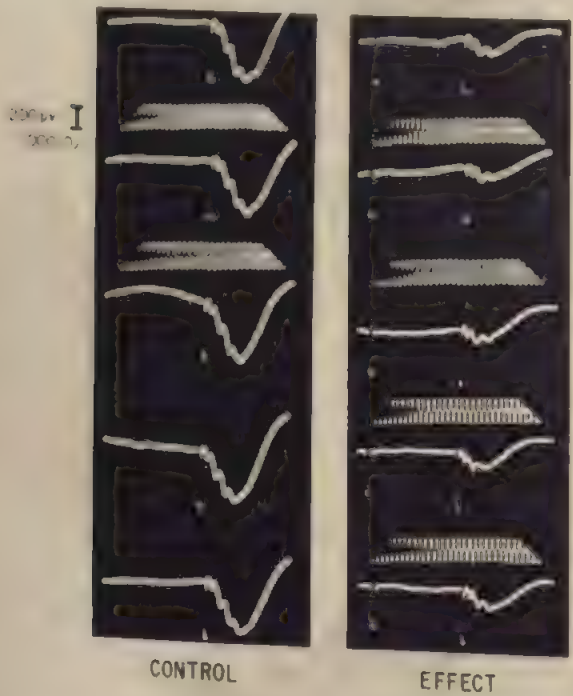
FIG. 2



REVERSAL OF CHEMICAL EFFECTS IN GENICULO-CORTICAL SYSTEM BY LATERAL GENICULATE DESTRUCTION

CORTICAL POTENTIALS EVOKED ALTERNATELY EVERY 2 SECONDS
THROUGH TRANSCALLOSAL & OPTIC RADIATION FIBERS
ipsilateral Common Carotid Artery Injections in Pentobarbitalized Cat

Fig. 3



INHIBITORY EFFECT OF CORTICO-FUGAL "OPTIC RADIATION" TRAIN CORTICAL POTENTIALS EVOKED THROUGH OPTIC TRACT

250 m sec. TRAIN 100/sec PENTOBARBITALIZED CATS

Fig. 4

tating its output. The latter kind of action can be quite readily demonstrated by other means. Thus interrupting the pathway at its cortical origin by freezing, results in a marked enhancement. By this and by direct stimulation of the feed back pathway from cortex to subcortex, its postulated inhibitory nature has been confirmed, Fig. 4.

We therefore appear entitled to a unitary view which says two important things relevant to possible mechanisms of hallucination. It says that the primary synaptic effects of psychotogens, exogenous or endogenous, related to LSD-25 are inhibition, which may, because of special pathways inhibited, present itself as a release phenomena, and that the threshold for dendritic synapses is lower. Therefore the initial action in the visual pathways is inhibition in the association or reference areas and in the dendritic synapses constituting a smaller fraction of the primary receiving area and assumed to control the feed back quenching pathway originating here and terminating in the subcortical relay.

COMMENT

Restated, the findings indicate in specific ways how synaptic inhibition can constitute a mechanism of hallucination by virtue of a two-fold effect. One is the release from cortical restraint, which is a familiar manifestation of incomplete anesthesia, and for which we now provide a specific pathway in the visual system. The other and probably the considerably more important effect is the differential inhibition of dendritic over somatic synapses, which, in addition to bringing about the release phenomenon, tends to impede communication with the reference areas, whose synapses are chiefly dendritic, and wherein, to the best of our present knowledge, resides the record of our experiences and our previous judgments. Diminished ability to scan these in order to evaluate present experience and place it in the framework of reality, would thereby lead to illusory and hallucinatory percepts.

It seems to us that illusion and hallucination are the same kind of aberrant reaction to stimuli, the former being to an identified stimulus in the external environment and the latter to an often unidentified stimulus

either in the external environment or in the internal one perhaps in the form of impulses that are more or less continuously circulating in the nervous system at subcortical levels. Our neurophysiological interpretation leads to the concept that hallucination and illusion thresholds are closely related and that measuring the latter, and the influence upon it of subclinical, i.e., not frankly hallucinatory, doses of psychotogens, can serve as an index of hallucinatory susceptibility.

The extent to which this neurophysiological concept of hallucination operates in psychoses, chemically induced or naturally occurring, and in neurological patients with deficits in the visual association areas is being tested by determining the responses to a number of measurable, experimental illusions of graded complexity and to the Rorschach test, as well as their modification by chemical psychotogens in the case of endogenous disease and by the tranquilizers. Analogous experiments will be carried out in behavioral studies of experimental animals. It is expected in this way to develop data that will critically test the hypothesis, which, stated in its simplest terms, says that the form of dissociation from reality known as hallucination may sometimes result from an actual dissociation of primary visual inflow from its association areas whose operation could have made possible a check with other cues and especially with remembered, visual reality.

It should be pointed out that the proposed mechanism is conceived of as a neurophysiological basis for visual dissociation from reality or hallucination, but not necessarily the only one. On the other hand, since the psychotogenic actions are not unique to the optic system, the concept has applicability and plausability in other cerebral systems as well.

A conceptual framework for organizing our knowledge of the entity, psychosis, and its manifestations serves a variety of important functions. Not the least of these is the continuous ready testing it affords of the matchings and analogies or deficits and inconsistencies from case to case and symptom to symptom in natural and experimentally induced psychoses. A concept of distorted performance must arise from

bring together all pieces of information on altered behavior and its underlying functional and structural components into a possible mechanism or origin. The very framing or stating of a proposed mechanism ipso facto calls for the testing of its adequacy to fit the concept and one very significant means of so doing is to attempt the therapeutic modification it suggests. The criteria for satisfying this are of vital interest equally to the experimenter and the clinician because they are the criteria for evaluating improvement of the patients.

The proposed technique, of measuring the effects of small doses of psychotogens, devoid of overt symptomatology, upon illusion thresholds offers promising possibilities in screening groups for individuals of low hallucination thresholds, who might profit by preventive treatment, and in determining psychotic status and its response to therapy.

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PHYSICIANS AS PSYCHIATRIC PATIENTS : PRIVATE PRACTICE EXPERIENCE¹

MANUEL M. PEARSON, M.D.,² AND EDWARD A. STRECKER, M.D.³

INTRODUCTION

A certain amount of interest has been raised in the subject of doctors as patients. Are they prone to certain illnesses? What conclusions can be drawn regarding the stresses of medical practice? What can be done to improve the medical care of physicians?

According to Dowling(1) physicians are particularly susceptible to certain illnesses. He has classified these as :

1. Hazards peculiar to profession ; infections (e.g. T.B.), radiation, and the misuse of drugs.

2. Hazards due to the stress of work : vascular disease (especially coronary artery disease), peptic ulcer, suicide, alcoholism and narcotic addiction.

3. Hazards characteristic of the favored socio-economic class : obesity, arteriosclerosis and diabetes.

Evidently a number of conditions mentioned as particular hazards are strictly in the field of psychiatry. Psychiatric illness, therefore, accounts for a considerable amount of the morbidity among doctors ; how much is very difficult to evaluate.

Dublin(2) found 1 death in 4 among doctors between ages 45 and 65 due to coronary artery disease. Compared with the general population in that age period, the rate of death from coronary artery disease is 80% higher among doctors. Work done under emotional stress and tension may be very significant in relationship to the incidence of coronary artery disease, a subject of considerable interest in psychosomatic medicine. Others(3) refer to coronary artery disease as the special occupational hazard of the profession. The objective of this paper is to review our experience in private practice in the therapy of physicians who have had psychiatric problems.

A PARTICULAR PROBLEM OF PRIVATE PRACTICE

The psychiatrist in private practice plays a significant role in the treatment of doctors. To point this up, just compare the number of doctors admitted to a public psychiatric facility like the Philadelphia General Hospital and the number admitted to a private psychiatric hospital, the Pennsylvania Hospital for Nervous and Mental Diseases. In the year 1958, of 2,000 admissions, only one (1) physician was admitted to the psychiatric department of Philadelphia General Hospital, while 12 physicians out of 441 (2.7%) admissions were patients at the Pennsylvania Hospital.

There are several good reasons for this, the main ones being the economic and socio-cultural factors. The doctor who is ill expects private care, knowing full well the value of selecting his own personal physician. As a member of a profession, he is in that social class level that subscribes to private care and generally can afford it. To preserve his professional status in a community, he is often forced to leave his home locale to enter a private hospital elsewhere. This frequently makes him ineligible for care in the out-of-state public hospitals. These same factors apply to the members of other professions as well : lawyer, dentist or clergyman.

INCIDENCE

No one knows exactly the incidence of psychiatric difficulties among doctors as a group. From Dowling's study(1) the occurrence is more than we generally assume. From a survey questionnaire of 10,000 doctors published by Parke, Davis Company,(4) .5% responded in the affirmative regarding the presence of psychiatric disorders. Two different medical school classes reported that 6% of one and 13% of the other have been or are under the care of a psychiatrist. In 1937, Strecker, Appel, Palmer and Braceland(5) stated that "slightly more than 46% of senior students in a representative medical school suffer

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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³ Dr. Strecker died on January 2, 1959.

from a doctor's hands up of a doctor's chair.

STATISTICS

A total of 71 physician-patients were treated by one of the authors (M. M. P.) and constituted about 3% of the total number of different private patients seen on 4 to 5 patients per hour over a 15 year period. In order to ensure anonymity, 66 of the total will be reviewed, showing statistical data regarding age, sex, civil status, type of medical practice, diagnostic categories and therapeutic results.

EARLY SIGNS OF EMOTIONAL DISTURBANCE

The most prominent early sign of emotional disturbance in these patients was the manner of living a hurried existence, with a gradually developing chaotic everyday life regarding office hours, appointments, eating and sleeping habits, and family responsibilities. All of these significant areas of living showed evidence of disorder, inefficiency and irregularity. Then the doubts slowly developed about ordinary office procedures with overconcern about giving hypodermics, prescribing ordinary medicines or recommending newer drugs. The doctor may become aware of tension and excessive uneasiness when unable to make an immediate diagnosis. Yet, he finds himself reluctant to refer patients to consultants for suggestions regarding diagnosis and treatment for fear of losing face or manifesting his anxiety.

He soon recognizes his irritability and frustration when treatment prospects for an illness are hopeless. All of this merges into a neglect of his practice as the mounting anxiety becomes overwhelming. A number of these physicians started early to treat their own anxiety symptoms by resorting to sedatives, alcohol and narcotics.

LONG STANDING UNHEALTHY LIFE ATTITUDES

Several long standing unhealthy life attitudes among these patients came to light. The most common distinctive unhealthy trait was masochism. This appeared in several forms, particularly in the chronically self-destructive faulty work life with excessively long hours and poor organizational habits, with no attempt to encourage his

practice to respect his regular office hours, no schedule breaks, no vacations, no physical exercise and no outside interests. He lived a constricted existence, often neglected about reading books and journals or attending medical meetings for his professional self-improvement. His morbidly self-sacrificing occupational life only exposed him to chronic exploitation by others since he displayed his excessive need to suffer. As a provocative question Dr. Horst¹⁶ recently asked, "How many physicians actually kill themselves by overwork so they will not have to bear suffering like their less fortunate patients?"

This flight into work frequently represented an escape from overwhelming personal conflict. One physician with the problem of impotence worked every day and each night as late as possible, obviously to avoid facing his marital problem.

Another unhealthy personality trend revolved about the illusion of being indispensable. His increasing fussiness and perfectionistic drives with an overdetermined preoccupation about unimportant details added up to the image of being so necessary. It was effective in constructing a life without pleasure. He was always "too busy" and there was "no one to relieve" him. Actually he saw to it that this was so.

Life long patterns of behavior regularly resorting to uneconomical mental dynamisms resulted in disturbances of varying degrees. These patients utilized denial, rationalization, reaction formation and overcompensation all too much. A striking example of denial and rationalization showed up in the narcotic addiction problem. These doctors took narcotics in spite of their previous academic training and understanding of drug addiction, denying the fact of their own vulnerability and rationalizing their actions on the basis of a medical indication which was totally unreal. For instance, several patients used narcotics for an overwhelming sense of fatigue, hardly a therapeutic indication for such heroic measures.

Being a doctor does afford an opportunity for a life with a reasonable degree of independence, but an excessive need fosters a drive for power, prestige and recognition in the form of rugged individualism, too

much competitiveness, and "playing God" (7). Several women doctors indicated that they selected a medical career to compete with men, or to avoid competing with women.

DIAGNOSTIC AND MANAGEMENT PROBLEMS

Obviously it is wasteful of an important human potential resource to delay diagnosing and treating a doctor with emotional illness. Generally speaking the sooner the diagnosis, the quicker the treatment and the greater chance for an early return to the important work of practising medicine. However, more often there is a considerable amount of hesitation and delay in getting the patient into active therapy. His own resistance is common enough, but frequently it is the result of unwitting neglect by the family and colleagues who rationalize that he, as a doctor, ought to know when and how to take care of himself. He doesn't.

His regression with illness can be quite complete and has nothing to do with his intellectual resources. He deserves just as objective a diagnostic study and recommendation for psychiatric therapy as possible.

There is definitely an added burden of responsibility for the psychiatrist looking after a fellow physician. The stirred up positive and negative counter-transference feelings, especially the identification, are well known. As a corollary, the cardinal principle in treatment and management consists in treating the physician patient as any other patient, purposefully omitting the fact of his special medical education. It is improper to assume that his past medical information adds up to special personality controls or particular immunity from emotional conflicts.

The management of the doctor-patient is all too often complicated by stressful situational problems. As an example, it is frequently necessary to recommend treatment in an environment some distance from the locale of his practice in order to maintain his professional standing and ensure future rehabilitation.

TYPES OF TREATMENT

Psychotherapy on an outpatient basis was the main type of treatment. About

one third of these patients required hospitalization for a varying period because of the severity of their difficulties, for protection and support, for medical care of their toxic states due to alcohol or drugs, and for specific somatic forms of therapy, such as electroshock (4 patients). With the exception of 2 patients, the average hospital stay was a little less than 4 weeks; one was transferred to a closed hospital and remained there 8 years before his discharge, while the other was a patient in an open section for 9 months. Approximately one-quarter of the patients were seen in a diagnostic and evaluation process or broke off treatment so early for varying reasons that they can scarcely be included in evaluating the therapy of this entire group.

Eighteen (27%) of our patients presented themselves with the problem of addiction. Our approach to the management and treatment of addiction centers upon two main principles: (a) achievement of abstinence—a completely alcohol or drug free existence; and (b) integrative psychotherapy. Unless the patient has reached the point of accepting abstinence as his only goal, therapy is valueless. There can be no psychotherapy of any lasting worth so long as the patient continues to take one drink or a "small dose" of medicine.

RESULTS OF TREATMENT

The problem of evaluating therapy presents its usual difficulties of no uniform standards and the too heavy reliance upon the clinical investigator's subjective evaluation. Taking that into account, we are impressed with the fact that this group of patients is a very satisfactory one from the treatment point of view. They have a reasonable chance of good progress in achieving the generally accepted therapeutic goals of becoming symptom free, developing emotional maturity and moving toward greater self-realization.

These satisfactory results make us feel that the doctor's life, his education, training and daily existence, have many meaningful values for the development of personality assets. Such areas of maturity can be explored and exploited in psychotherapy.

Below are the statistics on the patients in this study.

PHYSICIANS AS PSYCHIATRIC PATIENTS		
1. Sex		
Male	57	66
Female	9	
2. Civil Status		
Married Males	45	51
Married Females	6	
Single Males	12	15
Single Females	3	
3. Age Groups	No.	
Age 20 to 29	11	
Age 30 to 39	23	
Age 40 to 49	20	
Age 50 to 59	8	
Age 60 -	4	
4. Type of Medical Practice		
General Practice	17	
Specialists	36	
Surgery	(7)	
Psychiatry	(5)	
Pediatrics	(5)	
Radiology	(4)	
Other	(15)	
Residents	9	
Interns	4	
5. Diagnosis		
Psychotic Disorders	15	
Schizophrenic reaction (2)		
Manic-depressive reaction (11)		
Involuntional psychotic reaction (2)		
Personality Disorders	32	
Personality Trait Disturbances (12)		
Sociopathic Personality Disturbance (20)		
Alcoholism (addiction) 7		
Drug addiction 11		
Barbiturates 2		
Benzedrine 1		
Narcotics 8		
Other 2		
Transient Situational Personality Disorders	6	
Adult Situational Reaction (6)		
Psychophysiologic Gastrointestinal Reaction	2	
Psychoneurotic Reactions	11	
Anxiety Reaction (1)		
Depressive Reaction (2)		
Phobic Reaction (1)		

Obsessive compulsive reaction 2
 Psychoneurotic reaction mixed type (5)

Total 66

6. Type of Therapy
 Psychotherapy 46
 EST 4
 IST 1
 Consultation (or Counseling) 19

7. Location of Therapy
 Outpatient Therapy 16
 Hospital Therapy 20
 Inpatient Open Hospital (15)
 Inpatient Closed Hospital (5)

8. Results of Treatment
 Recovered or much improved 28 (42%)
 Slightly improved 8
 No change 9 (29%)
 Worse 2
 Consultation only 19 (29%)
 Total 66

SUMMARY

Psychiatric illnesses account for a considerable amount of the morbidity among doctors. Although no one knows the exact incidence, the treatment of emotionally ill doctors falls into the special province of the psychiatrist in private practice. Several significant early signs of emotional disturbance, particularly in the conduct of his profession, stand out; such as a hurried existence, self-doubts about the ordinary medical procedures, excessive tension when confronted with a difficult diagnostic problem, and gradual neglect of his practice. The most common long standing unhealthy life attitude was a morbid, self-sacrificing, driven existence, best described as masochism since it always exposed him to exploitation by others.

Much delay was the general rule before a doctor got into therapy, even though therapy turned out satisfactorily in spite of stressful situational problems. While the types of disorders ran the gamut of the different diagnostic categories, the largest number had the diagnosis of personality

disorder. Twice as many specialists as general practitioners made up this group. The treatment was largely outpatient psychotherapy. The cardinal principle in management consisted in treating the physician-patient, purposefully omitting the fact of his special medical education.

CONCLUSIONS

From the review of these physician-patients seen in private practice over a period of 15 years, several conclusions may be drawn :

1. Emotionally ill doctors do not seek help for themselves early enough, neglecting emotional problems as they do their physical disabilities.

2. Special emphasis should be paid to overcoming the usual resistance to the proper diagnosis and treatment of doctors

with problems, keeping in mind the early signs of emotional disturbance showing up in his conduct of his profession.

3. The outlook with adequate psychotherapy is quite satisfactory.

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TREATMENT IMPLICATIONS OF A NEW CLASSIFICATION OF PARENTS OF SCHIZOPHRENIC CHILDREN¹

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This paper describes the variations in personality structure of the parents of schizophrenic children. The different types of manifest personality of the parents have important implications for the treatment of the total family.

Our research unit has participated in the study of 40 schizophrenic children and their parents at the outpatient clinic of the Judge Baker Guidance Center and 40 families with schizophrenic children at the inpatient setting of the Metropolitan State Hospital. The research material is drawn from long-term psychotherapy (1 to 10 years) with both parents and child, diagnostic procedures, psychological testing, and direct observation of the parent-child interaction. The schizophrenic children of these parents are between 6 and 17 years of age and show no demonstrable organic pathology.

The problem of schizophrenia presents many facets for investigation. The relationships between the genetic (8, 9), sociological (14), chemical (2, 3, 7, 11) and psychological (1, 4, 5, 6, 12, 13, 14, 15, 16) phenomena are being studied by many investigators. The present research concentrates on the study of the personality phenomena and psychogenic factors observed in the families of schizophrenic children.

Our interest in parental personalities developed when we observed differences between parents of children seen at inpatient and outpatient settings. We found that widely varying treatment and management procedures were required for the 2 settings. For example, the schizophrenic child seen at the outpatient clinic more frequently would have an intact family with the father a scientist or university professor, and the mother equally well educated and apparently competent. This would be in marked contrast to the family

background of some of the schizophrenic children at the state hospital who came from broken homes with deserting, psychotic, or alcoholic parents. Further study led us to believe that, in spite of the manifest differences in parents from the 2 settings, there were important basic similarities of pathology in the personalities of all these parents.

Our central interest is the treatment implications of our classification of the parents. The specific pathology demonstrated by these parents occurs at 2 levels, which we describe in terms of core disturbance and superstructure. Regardless of the externals of their behavior, these parents all show a similar core disturbance. They express the fear that experiencing their inner tensions will lead to their own total destruction or annihilation. They may express this basic fear in many ways, and it may take a long period of treatment before they are able to verbalize any aspects of their fear. The stimuli which may threaten the parent with his potentially overwhelming anxiety are found in the entire gamut of non-differentiated emotions, *e.g.*, anger, fear, or sexual excitement, associated with closeness to an object—any of which can be a threat capable of mobilizing potentially overwhelming anxiety. In treatment the parents, particularly in the early contacts, act in ways designed to protect themselves against the arousal of their intense feelings. When eventually they are able to reveal their underlying fears, they often express them in terms of the familiar world destruction fantasies of the schizophrenic. Not only do these parents devise defenses against external arousal of their inner anxiety, but they also develop pathologic defenses in order to cope with the anxiety itself. We find that these mechanisms which are developed to protect against the fears of annihilation are the familiar psychotic mechanisms which deny reality. Some of the parents function predominantly at this level and demonstrate an overtly schizophrenic personality. The majority of

¹ Read at the 115th Annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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the parents studied also demonstrate various superstructures of personality organization which they use to deal with their core disturbance. However, the predominant characteristics of their manifest personality constitute the basis for our separating them into 4 diagnostic categories arranged in order of increasing manifest disturbance. We observe also some mixed types with overlapping.

1. *Pseudoneurotic*. This group is analogous to the parents of autistic children described by Kanner(10). They are frequently professional people often having achieved to a considerable degree within their own circumscribed field. The fathers most frequently are teachers, scientists, communications personnel in radio and television, engineers, and accountants. They use neurotic-like defenses (denial, avoidance, rationalization, undoing, reaction formation, compartmentalization, intellectualization, etc.) to compulsively maintain a rigid, stereotyped life situation, often functioning effectively in narrow areas of endeavor. Close observation, however, gradually reveals their underlying psychotic mechanisms with their primary process phenomena, including disturbances in reality testing. These parents often clearly express their identification with the psychotic child, e.g., one mother who had completed graduate school education and was very busy with numerous community activities, acknowledged that she too, had been isolated, withdrawn, and asocial when she was growing up. Later in therapy, she explained that the family cat acted in many psychotic ways just like her son; and then later the mother herself meowed and made catlike motions on greeting her child.

Social interaction in this group appears adequate superficially, but it is kept at a tolerable minimum and always has an impersonal quality. These parents use various devices to control external stimulation from human sources. For example, Mr. Q brought his hi-fi phonograph records to a party in order to drown out the conversation and control the people.

In treatment, these parents tend to be very regular in attendance, but we find that they deal with therapy in the same way that they handle their child and other life

situations. There is apparently the implied hope that adhering to a minimum of the required forms of behavior, e.g., attending clinic, but not getting emotionally involved in the treatment, will prove sufficient. There is a tendency to discuss problems in an intellectual way. Many are well read on childhood schizophrenia, sometimes using the information as a further barrier to treatment. In the initial stages of therapy all areas of competence need to be supported. Social approval is very important to these parents; and their areas of adequacy can be utilized to form a base of relative security for later dealing with the more disturbed features of their personality. Placing blame for the child's illness is often attempted by one parent reviewing various taints in the spouse's family. It is necessary to refrain from questioning these defensive maneuvers until the treatment relationship gives the parents the security to face their feelings about themselves.

2. *Somatic*. The occupations represented in this group include skilled factory labor, nursing, teaching, and small business operation. The symptom focus of this group is on the body in various ways, including hypochondriacal fears and actual somatic reactions. The hypochondriacal parents are fearful of body deterioration or express concern about body functioning, while the parents with somatic symptoms suffer from cardiovascular reactions, skin eruptions, asthma, headaches, etc.

These parents with somatic reactions express the primitive thought processes of the schizophrenic. One mother with eczema thought of her skin as scaly and that the scales could poison those around her. This mother gave her schizophrenic child a scaly animal, an alligator, for a pet. The personality structure of these parents is in contrast to patients with psychosomatic reactions who express their conflicts at a less regressed level of development. Although these parents with the somatic reactions may, like the pseudoneurotic, attempt to intellectualize and deny, they are more openly aware of their own pathology and their involvement in the child's difficulties. In treatment, these parents, who are so fearful of their emotions, often convey their feelings through a body

last year. For example, one mother expressed her feelings about a daughter's wedding by having to go to the hospital with a simulated "heart attack," which she herself later identified as a "broken heart." In the treatment of these parents, particularly in the early stages, it is advantageous **to relate to them around their concerns** about physical illness, rather than confronting them with the underlying implications of their physical reactions. Only gradually **and much later, it becomes possible to approach the deeper sources of their anxiety.**

3. *Pseudodelinquent.* Among the range of persons in this group are bartenders, armed service personnel, criminals, alcoholics, and transient laborers. They utilize antisocial acting out either in gross form; e.g., stealing, promiscuity, desertion, physical abuse, or in a more subtle form like occupational desertion. These parents of the schizophrenic child are attempting primarily, by their antisocial behavior, to externalize the overwhelming anxiety associated with the destructive forces they feel within themselves. For example, the promiscuous mother of a schizophrenic child said that she had **to engage in sexual activity or else she would go crazy.** The antisocial behavior for these parents serves to ward off their underlying psychosis. This is in contrast to the promiscuous delinquent who describes her behavior as a search for a missing parent. The delinquent patients with impulse-ridden character disorders (12) do not show psychotic mechanisms, have a relatively more intact personality, and are delinquent as a defense against loss and depression.

It is very difficult to involve these pseudodelinquent parents in any sustained treatment relationship. Our information is primarily derived from diagnostic study and unsustained contact.

During treatment it is particularly important to understand that the antisocial behavior has meaning and is frightening to these parents. They convey the concept that they are swept into antisocial action by the overwhelming force of their anxiety. For these parents the stimulation of emotional interaction is particularly threatening. They may respond if first helped to develop

an intellectual framework around which they can comprehend and contain their emotions. This may be accomplished by helping them see the patterns of their behavior in a time sequence without moral judgment or pressure to face the underlying emotions. Later, they can be helped to approach their feelings more directly. These are particularly explosive parents whose fearfulness is equaled only by the potential violence of their acting out; however, if their imagination and intellect can be reached, they may be able to respond.

4. *Overly psychotic.* When we study these families we find farmers, junk dealers, clerks of many kinds, housepainters, and taxi drivers. These parents, from the point of view of adjustment to environment, are least **successful in their defense structure.** Classical psychotic symptomatology is seen, such as hallucinations, delusions, and reality distortions. Some of these parents require hospitalization, while others are able to maintain themselves marginally within the community. In treating them it is necessary to be aware of the importance of the total family interaction.

CLINICAL FINDINGS

We studied the classification of all these parents, and we found significant differences between the populations seen at the Judge Baker Guidance Center and the Metropolitan State Hospital. There are proportionately more pseudoneurotic and somatic types of parents who come to the outpatient clinic, whereas pseudodelinquent and psychotic types predominate at the inpatient setting.

When categories of parents are combined into a comparison of the community syntonic defense structure (pseudoneurotic and somatic) with community dystonic defense structures (pseudodelinquent and psychotic), the difference is significant at the .001 level.

These differences in the incidence of family types in different settings have an influence on the treatment planning required for the management of the case.

We find that the parents of schizophrenic children tend to marry individuals with a manifest defense structure that is similar

TABLE A

CLASSIFICATION OF PARENTS ACCORDING TO PERSONALITY SUPERSTRUCTURE
JUDGE BAKER GUIDANCE CENTER AND METROPOLITAN STATE HOSPITAL

	<i>Pseudo-neurotic</i>	<i>Somatic</i>	<i>Pseudo-delinquent</i>	<i>Psychotic</i>	<i>Totals</i>
Judge Baker Guidance Center	34	17	8	14	73
Metropolitan State Hospital	20	12	22	21	75
Totals	54	29	30	35	148

*Chi Square significant at $p=.01$.
Contingency coefficient—.29*

TABLE B

CLASSIFICATION OF PARENTS ACCORDING TO PERSONALITY SUPERSTRUCTURE
JUDGE BAKER GUIDANCE AND METROPOLITAN STATE HOSPITAL

	<i>Community Syntonic (Pseudoneurotic and somatic)</i>	<i>Community Dystonic (Pseudodelinquent and psychotic)</i>	<i>Totals</i>
Judge Baker Guidance Center	51	22	73
Metropolitan State Hospital	32	43	75
Totals	83	65	148

*Chi Square significant at $p=.001$.
Contingency coefficient—.27*

TABLE C

MARITAL ASSOCIATION OF PARENTS ACCORDING TO
PERSONALITY SUPERSTRUCTURE

		Fathers				
		<i>Pseudo-neurotic</i>	<i>Somatic</i>	<i>Pseudo-delinquent</i>	<i>Psychotic</i>	<i>Totals</i>
Mothers	Pseudoneurotic	18	3	1	1	23
	Somatic	7	3	2	4	16
	Pseudo-delinquent	2	0	10	1	13
	Psychotic	2	4	4	8	18
	Totals	29	10	17	14	70

*P less than .001
Contingency coefficient—.63*

to their own. This tendency is significant at the total level.

In the therapy for all of these parents, the ultimate goal is to deal with the core of **pathologic defense mechanisms and their effects upon the child**, but these parents first have to be approached through the superstructure of secondary defenses. In addition, some of their secondary defenses, such as intellectual capacity, include some of the personality strengths which have to be supported as the basis of dealing with the more disturbed aspects. With all the types of parents of schizophrenic children, the family structure is in a delicate balance. Therapeutic intervention has an effect on all the participants. Help toward a remission for one family member may increase the anxiety in the other family members and may produce a counter-pressure against therapy. We emphasize the necessity of treating both parents as well as the child.

SUMMARY

This paper reports a study of 40 parents of outpatient and 40 parents of inpatient state hospital schizophrenic children. Despite a similar core pathology, the parents of schizophrenic children demonstrated **major differences in their personality superstructure**. The differences in occupation range from competent college professor to the transient and unskilled worker. Some are highly successful. Some are hampered in their achievements, and suffer illnesses such as asthma, and some are hospitalized schizophrenics. We were able to describe and classify these 80 parents according to their manifest personality structure within 4 categories. These are pseudoneurotic, somatic, pseudodelinquent, and psychotic. Although treatment is directed toward the similar core pathology in all the parents, we discuss the major differences in treatment and management techniques required in each of these types.

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CLINICAL NOTES

TRIFLUOPERAZINE COMBINED WITH CHLORPROMAZINE

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In a previous study(1) on the treatment of chronic schizophrenics with trifluoperazine (Stelazine) alone, it was found that this drug had an extremely potent anti-psychotic effect (*i.e.* combating the delusions and hallucinations of the schizophrenic) with a minimal sedative action, and that it was most useful in activating the withdrawn, apathetic, disinterested, regressed patient. However, it was subsequently observed that many of these regressed patients who were at first stimulated by the drug to a state of alertness and interest in their environment, later became more tense, irritable, hostile and even aggressive when they were maintained on trifluoperazine for many months. Furthermore, our study also showed that the usefulness of trifluoperazine was diminished by the high incidence of extra-pyramidal side-effects, such as, akathisia, Parkinsonism and dystonic symptoms. These were more marked as the dosage was increased (from 2 mg. q.i.d. to 30 mg. q.i.d.).

For these reasons, it was decided to combine trifluoperazine with chlorpromazine which has a greater sedative action and less extra-pyramidal side-effects. In this way, the dose of trifluoperazine could be kept lower without sacrificing potency, and whenever increased irritability manifested itself, the trifluoperazine could be reduced still further and the chlorpromazine raised.

One hundred eighty chronic schizophrenic female patients were chosen for the present study. Their ages ranged between 16 and 69, and they had been continuously hospitalized for 2 to 27 years. All had been receiving tranquilizing drugs for at least 2 years with slight or no improvement. Sixty-nine patients were receiving chlorpromazine (Thorazine) alone, 110 patients a combination of chlorpromazine and prochlorperazine (Compazine), and 1 patient prochlorperazine alone. These patients were then

placed on a combination of chlorpromazine and trifluoperazine. The dose of chlorpromazine ranged from 50 to 200 mgs. q.i.d., and the dose of trifluoperazine from 1 to 10 mgs. b.i.d. They were kept on this combination of drugs for 4 to 8 months, and at the end of that period their progress was evaluated as follows: 8 patients were markedly improved, *i.e.*, in remission and able to be released from the hospital; 60 were moderately improved, *i.e.*, although not well enough to live outside of the hospital, they were now usually cooperative, more alert, more interested in their environment, more sociable, and more active in the hospital programs; 47 were slightly improved; 35 were unimproved, and 30 were worse, becoming restless, irritable, hostile and aggressive despite adjustment of drug dosage. In the latter group it was finally necessary to discontinue the trifluoperazine, leaving chlorpromazine alone. The disturbed symptoms then gradually disappeared. It should also be noted that 30 of the moderately improved patients and 28 of the slightly improved patients showed most of their improvement early in therapy, but after several months they began to manifest increased irritability and restlessness, necessitating a reduction of trifluoperazine and a raise of the chlorpromazine dose.

In summary, although trifluoperazine is most useful in activating the withdrawn, regressed schizophrenic, the drug often tends to produce increased restlessness, irritability, hostility and even aggression when it is used in long-term therapy. By combining trifluoperazine with chlorpromazine which has a greater sedative action, we have been able to control the increased irritability in most instances, without sacrificing anti-psychotic potency.

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CHLORPROMAZINE (THORAZINE) "LIGHT-EXHAUSTION" IN ADOLESCENTS

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The recent clinical note by Ford(1), as well as papers by Mahrer, *et al.*(2) and Ext(3), on mepazine (Pacatal)—induced heat stroke has suggested that it would be useful to report on a similar kind of occurrence associated with the use of chlorpromazine. In all of these reports, heat-stroke is attributed to a peripheral atropine-like action of mepazine or mepazine with prochlorperazine. The almost uniform presence in our cases of a sub-normal oral temperature would tend to suggest a different condition than that described by these authors, and a mechanism other than the atropine-like action of a phenothiazine. However, the inference that the two conditions may be related, as are heat-stroke and heat-exhaustion, cannot be escaped. Based on our observations, the phenomenon to be described is termed "light-exhaustion."

In the summer of 1957, about 40% of the 75 boys, ranging in age from 12-16, resident in our Unit, were on varying dosages of chlorpromazine, ranging from 75-300 mgs. daily in divided doses. Most boys were in the mid-range of dosages.

The boys in our unit walk approximately 200 yards from our building to participate in recreational activities in the playground. They had gone and returned without incident on many occasions during the spring and early summer of the year, even on some quite hot and humid days. In the latter part of June, the day being quite hot and the sun shining brightly, 4 boys began to complain of weakness within 5 minutes of having arrived at the playground. In this short time, they had not really started to exert themselves.

It was quickly noted that the boys were unusually pale. The skin of each was felt to be cold and wet. Pulses were determined and described as rapid, somewhat difficult to palpate, and in two instances, irregular. The sensation of weakness was described by the affected boys as feeling unable to move at all, associated with feeling "light-

headed." With assistance and encouragement, three boys walked back to the building. It was necessary to carry one of them. After 10 minutes of bed-rest, pulses became full but remained a little rapid. Within 30 minutes, the boys were again "normal," subjectively and objectively. In the next few weeks, 8 other boys were similarly affected. By this time, we had started to take oral temperatures, which ranged from 96.6° to 98.7°F. Most temperatures clustered around 97.6°F. Substituting therapeutically equivalent doses of other tranquilizers, or discontinuing tranquilizer medication in some cases altogether, we experienced no further difficulties that summer.

By the summer of 1958, having forgotten our previous summer's experience, we had 30% of our boys on chlorpromazine. Another incident similar to the ones mentioned, this time involving 3 boys, again occurred. At this point, we kept all the boys indoors for a week while we changed tranquilizers from chlorpromazine to perphenazine (Trilafon) and had no further difficulties. In this past, very hot summer of 1959, chlorpromazine was replaced early by perphenazine. There were no mass attacks of weakness.

Prior to these incidents, the characteristic dermatologic and occasional systemic reactions due to the photo-sensitizing properties of chlorpromazine had been partially prevented through the use of sunhats and the somewhat bothersome application of an ultra-violet ray screening ointment. These precautions had not been needed for our negro boys, who comprised 10% of our population.

Although the number of boys involved is small, it may be proper to report that not one suffering an attack of weakness was a negro. Further, it appeared to us that these incidents occurred only when the sky was unclouded, and that they did not occur on equally hot but slightly cloudy days. Also, they did not occur in the Unit proper which became very hot at times, being located on the top floor of a four-story brick building.

¹ Boys' Adolescent Unit, Central Islip State Hospital, Central Islip, N. Y.

In summary, the occurrence of attacks of weakness in adolescent boys taking chlorpromazine, associated with very mild exertion, high environmental heat, and possibly more significantly, high energy levels of ultra-violet radiation, and accompanied by sub-normal oral temperatures, is reported. The low body temperatures noted, as well as the possibly significant role of ultra-violet radiation, suggest that the mechanism of this effect is a central one, rather than a peripheral atropine-like inhibition of sweat

secretion. For the reasons stated, we use the term, "light-exhaustion," in characterizing this phenomenon.

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THERAPEUTIC IMPORTANCE OF EXTRA-PYRAMIDAL PHENOMENA EVOKED BY A NEW PHENOTHIAZINE

JOHN DENHAM, M.D., AND DAVID J. E. L. CARRICK, M.R.C.S.¹

During a trial of 2-dimethylsulphamoyl-10-3 (4-methyl-1-piperazinyl)propyl phenothiazine, 7843 R.P.,² resemblance between the neurological manifestations induced by this drug and those occurring as sequelae of epidemic encephalitis was noted. 7843 R.P. produces with more constancy and intensity than any previously tested drug, extra-pyramidal disturbances. These may be employed as therapeutic indices and disappear entirely after withdrawal of the drug.

During the treatment of 40 male schizophrenic patients, with durations of illness ranging from 2-40 years and refractory to all forms of treatment, in a majority the state of akinesia without hypertonia; the akineto-hypertonic state; the hyperkineto-hypertonic state was produced. Excitomotor phenomena and autonomic disturbances like hypersudation, hypersialorrhoea, and seborrhoea occurred in a number of patients. Tremors, myoclonic movements and inversion of the sleep rhythm were frequently observed. Additional signs and symptoms, which increased the similarity to epidemic encephalitis, included painful joints; positive and inverse Argyll-Robertson phenomenon; ankle oedema; and localized sweating, erythematous plaques and, frequently, hyperaesthesia of the soles. The order of appearance of the various symp-

toms was also observed to be very similar to that of von Economo's disease.

Correlation of drug conditioned extra-pyramidal disturbances with the therapeutic efficacy existed throughout the trial. Twenty-one patients have shown total remission of their schizophrenic symptoms after producing marked extra-pyramidal disturbances. In the remaining 19 patients, extra-pyramidal symptoms were less marked and slower in appearance. Of these, 8 have been very much improved; 4 much improved; 6 improved. The one failure has shown no effects of the drug at all. The prophylactic administration of anti-parkinsonian agents, whilst reducing or abolishing extra-pyramidal disturbances, reduced the efficacy of the new phenothiazine.

Delay's "discontinuous treatment" was adopted, i.e. the patient receives gradually increasing doses of the phenothiazine until maximum muscular hypertonicity is achieved, avge. dose 30-50 mg. t.d.s.). This level is maintained for 5 days when the drug is withdrawn. Improvement in the mental state usually occurs as the drug-induced neurological abnormalities dissipate. Should total remission be achieved at that stage, a maintenance dosage of 2½ mg. -10 mg. daily is given. If psychiatric symptoms remain, further courses of treatment are started with the dosage which was previously found to produce maximum hypertonicity. Hallucinations and aggressive behaviour commonly disappear within 48

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² RP 7843 was provided through the courtesy of May & Baker Ltd., Dagenham, Essex.

hours of inception of the first course. "Defect States" may require several courses.

SUMMARY

The neurological manifestations evoked RP 7843 were observed to be analogous with those of epidemic encephalitis. These

extra-pyramidal disturbances are of value because of the associated therapeutic benefit but also for the control of dosage and as prognostic pointers. This sulphamoyl phenothiazine is of extraordinary value in the treatment of all stages of schizophrenia and raises new theoretical considerations.

A RAPID URINE COLOR TEST FOR THIORIDAZINE (MELLARIL, TP 21, SANDOZ)

IRENE S. FORREST, Ph.D., FRED M. FORREST, M.D.,
AND AARON S. MASON, M.D.¹

A recently introduced phenothiazine derived drug, thioridazine (Mellaril, TP 21), also known chemically as 10-[2-(N methyl-2-piperidyl) ethyl] phenothiazine hydrochloride, is widely used as a neuroleptic of reportedly reduced toxicity and side-effects. In a number of previously published rapid urine tests for various phenothiazine drugs (1-3) we pointed out the purpose and importance of objectively testing for actual drug intake, primarily on the wards of mental hospitals, in outpatient drug clinics, and also in private psychiatric practice.

All of the above-mentioned urine tests were devised for specific drugs and specific ranges of dosage to yield optimal color chart readings. Although these tests as well as a general test for small amounts (10 to 150 mg. daily) of all phenothiazine drugs (4) react with urines containing thioridazine to some extent and in a limited dosage range, they do not produce sufficiently gradient color development over the entire dosage range of this drug for proper semi-quantitative evaluation.

SPECIFIC TEST FOR THIORIDAZINE (MELLARIL)

A specific test reagent for thioridazine was therefore devised. A solution consisting of 2 parts of 5% ferric chloride solution and 98 parts of 30% (by volume) sulfuric acid proved most satisfactory over the dosage range of 75 to 2,500 mg. per day. The test is performed by placing 1 cc. of urine in a test tube, adding 1 cc. of test reagent and shaking gently. The resulting color reaches

its maximum intensity within 20 to 30 seconds, and is read thereafter against the color chart. In doses below 150 mg. per day, a pale purplish pink will result (the + level of the color chart), with more intense purple to violet shades of color being formed for increasing daily doses to approximately 1,000 mg., (++ to ++++ levels of the chart). At drug intake of more than 1,000 mg. per day, opaque, deep violet to blue reactions are obtained.

RELIABILITY OF TEST, LIMITATIONS AND POTENTIALLY INTERFERING FACTORS




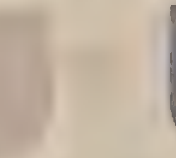
The Mellaril color complexes are stable enough at all dosage levels to permit leisurely reading against the color chart. No false negative tests have been seen to date in more than 1,800 urine specimens containing Mellaril as the only phenothiazine compound. In cases of extreme urine dilution after fluid intake of 3,000 cc. or more per day, a urine of a patient ingesting *e.g.*, 600 mg. thioridazine per day might read only + to ++, while a 200 mg. urine might appear negative. In these cases, as well as in testing urine specimens of patients receiving less than 75 mg. per day, it might be advisable to double check by carrying out a supplementary and equally simple test for small amounts of all phenothiazine drugs(4). Two false positive tests have been encountered in a series of 500 control urine specimens free of phenothiazine compounds. They were due to the excretion of large amounts of antitubercular medication, especially paraaminosalicylic acid and metabolites thereof. No false positives in the

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RAPID URINE COLOR TEST FOR THIORIDAZINE (MELLARIL, SANDOZ)

Place 10 ml. of urine in a test tube, add 1 cc. of test solution,* mix by shaking gently. Allow color development to reach its maximum intensity (20 to 30 seconds) then read against the color chart:

Daily Drug Dose:

+	++	+++	++++
			
75-150 mg.	150-450 mg.	450-800 mg.	800 mg. & over

* Test Solution consists of: 2 parts of 5% ferric chloride solution
98 parts of 30% sulfuric acid (by volume).

Each color of the chart represents an average of 500 urine tests per dosage level. At each level of intensity some deviations towards more pink or more violet shades have been encountered.

Unspecific darkening of urine on addition of test solution, and or absence of pink or purple color development is considered a negative test.

presence even of large amounts of acetylsalicylic acid and its metabolites were seen due to the low pH of the mixture of urine and reagent. (The total sulfuric acid concentration amounts to 15% which may cause unspecific darkening of some urine specimens but precludes the false positive reactions due to urinary aspirin, commonly seen in the presence of ferric chloride at an overall acidity of less than 5% of a mineral acid.)

Urinary bile metabolites arising at impaired liver function might conceivably yield false positive tests, but have not been encountered in this series of 500 control urines.

All urines from patients suffering from phenylketonuria react to some extent with the Mellaril test reagent. The color development in these cases ranged from traces to the ++ level of the color chart in varying shades of pink.

Other phenothiazine compounds either administered simultaneously or previously—or discontinued even as long as 12 weeks before Mellaril therapy—interfere with the proper interpretation of the Mellaril test,

especially if the previous drug dosage was high, and the patient a "slow excretor" (5). The Mellaril reagent will yield color reactions also with other phenothiazine compounds, particularly those not linked to piperazine, but the color chart is specific for thioridazine and does not yield semi-quantitative data for other phenothiazine compounds, for which it is a potential, but not an optimum reactant.

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CLINICAL EVALUATION OF CHLORPROTHIXENE

PAUL E. FELDMAN, M.D.¹

Chlorprothixene [trans-2-chloro-10-(3-dimethylaminopropylidene) thioxanthene hydrochloride] is a new, non-phenothiazine, central nervous system depressant which is structurally identical with chlorpromazine other than for the fact that a carbon has been substituted for the nitrogen in the phenothiazine configuration. Preliminary animal and human studies seem to suggest that its pharmacodynamic and therapeutic properties are similar to those of chlorpromazine. Animal toxicity studies with this compound have been most encouraging in that they indicate a high level of non-toxicity.

This report pertains to 50 chronically psychotic hospitalized patients with an average age of 41 years and an average chronicity of illness of 5.8 years who were selected to test the therapeutic efficacy of this compound. This test-group consisted

of patients in both "hyper" and "hypo" states and the majority of them were of the schizophrenic variety. Eleven evaluators, with an average case load of 4+ patients participated in this study.

Prior to the onset of medication and at two week intervals thereafter, each patient received a battery of liver function tests (Alkaline Phosphatase, Indirect van den Bergh, Thymol Turbidity and Cephalin Flocculation), complete blood studies including micro-hematocrit and complete urinalyses including a determination of urobilinogen.

The usual tranquilizer side effects (*i.e.*, drowsiness, dizziness, ataxia, jaundice, parkinsonism), were not encountered. Two patients, both receiving in excess of 300 mg. chlorprothixene per day developed slurred speech. In one instance this was persistent and in the other was ameliorated by the reduction of dosage.

In no instance was it necessary to discon-

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tinued therapy because of adverse drug effects. The average duration of treatment at the time of final evaluations was 106 days. Various dosage levels were employed by the individual clinicians. The usual starting dosage was 50 mg. b.i.d. or t.i.d., and some patients received up to 250-500 mg./day.

The usual, intermittent, abnormal liver function tests were noted. These were in all respects similar to the sporadic, abnormal readings encountered in unmedicated control groups of hospitalized psychotic patients.

The most effective dosage levels appear to be 50-150 mg./day. No particular advantage was apparent by exceeding this level. Forty-five percent of the schizophrenic patients showed significant, overall improvement and 52% of the "hyper" states (irrespective of diagnostic category) showed significant overall improvement. Positive changes in mental status usually

became apparent at about the 10th to 14th day of treatment. The response of "hypo" state patients was disappointing. 21% showing a significant overall improvement.

The target symptoms which appear to respond most effectively to chlorprothixene therapy are 1. Interest in environment; 2. Delusions; 3. Hyperactivity; 4. Hostility; 5. Combateness; 6. Tension and 7. Affect.

Upon the basis of this study it appears that chlorprothixene compares favorably with most of the phenothiazine tranquilizers. It has the added advantage of being non-toxic and should be a valuable addition to our armamentarium of psychotherapeutic drugs. Because of its non-toxicity, it may be useful in the treatment of outpatients where adequate clinical supervision is not feasible. It may also be indicated as substitution therapy in patients who have responded adversely to a phenothiazine compound.

TRIAL OF Ro 1-9569/12 ON A GROUP OF APATHETIC CHRONIC SCHIZOPHRENIC PATIENTS

T. E. WECKOWICZ, M.B., Ch.B., D.P.M.,¹ T. WARD, M.D.,¹
AND A. HOFFER, Ph.D., M.D.²

Ro 1-9569/12 is 2-oxo-3-isobutyl-9, 10-dimethoxy-1, 3, 4, 6, 7, 11b-hexahydro-2H-benzo quinolizine.

The derivation of this compound from phenylethylamine and the similarity of its structure to adrenaline suggest that it should be an activating compound similar to the sympathomimetic amines like amphetamine. It is therefore possible that this drug might activate apathetic schizophrenic patients, who are the most difficult therapeutic problem in mental hospitals. This is a pilot study³ undertaken to test this possibility.

Twenty chronic male schizophrenic patients were chosen from a chronic ward of a mental hospital. The clinical picture in all the cases was that of profound lethargy and apathy. Over-feeding was a problem with many. The patients were rated on the Weyburn Assessment Scale. On the basis of this rating and also on the basis of the age and length of hospitalization, they were divided into two matched groups, 10 patients in each group. The sample included a pair of identical twins who had developed schizophrenic illness within a few months and who presented identical clinical picture. One twin was included in the first group, the other in the second.

A double-blind method was used; one group received placebo, the other received the drug. The trial lasted 14 days, during which time both groups received one 50 mg. tablet twice daily. After two weeks the patients were rated again on the Weyburn Assessment Scale and assessed clinically by

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² Director of Psychiatric Research, University Hospital, Saskatoon, Sask.

³ This work was carried out using funds provided by the Rockefeller Foundation and the Federal Fund.

We would like to express our thanks to Hoffman-La Roche Inc., for supplying Ro 1-9569/12 and placebo tablets, and also to Dr. H. F. Osmond, the Superintendent of the Saskatchewan Hospital, Weyburn.

the psychiatrist in charge and the ward supervisor⁴. The patients were weighed before and after the trial and also a white cell blood count was carried out. Blood pressure was checked daily.

There was no difference between the groups on the Weyburn Assessment Scale at the completion of the trial. On clinical assessment, in the placebo group, there was no change in 8 cases, slight improvement in 1 case; 1 case was worse. No patient became more active.

In the drug group there was no change in 4 cases, 2 patients improved slightly, the remaining 4, although no "improvement" was noticed, became more active. One of these patients tried to escape. In two

⁴ Neither the rater nor the nursing staff was aware of the hypothesis. They were looking for overall improvement rather than "overactivity."

patients this "overactivity" became a problem from the point of view of nursing care and management. The other side effects were "hot flushes" in 2 subjects, and drowsiness in 3 subjects. The identical twin who received the drug became over-active.

There was no change in blood pressure, in weight, and in white cell blood count. Thus one can conclude that, although Ro 1-9569/12 in the doses given does not bring spectacular "improvement" in chronic schizophrenic patients, it activates these patients and as a result, could make them more accessible to psycho-therapy and group therapy.

SUMMARY

During a pilot study it was found that Ro 1-9569/12 tended to activate chronic schizophrenic patients, although it did not produce marked clinical improvement.

DISCONTINUATION OF TREATMENT WITH ATARACTIC DRUGS¹

A Preliminary Report

MARTIN GROSS, M.D., IRENE L. HITCHMAN, M.D., WALTER P. REEVES, M.D.,
JORDAN LAWRENCE, M.S., AND PAULINE C. NEWELL, M.S.²

Thousands of patients are yearly released from mental hospitals after successful treatment with ataractic drugs. This preliminary report is designed to answer the following questions: should drug treatment in these patients be continued indefinitely or can it be discontinued without causing a relapse? Can clinical or psychological investigation identify factors to guide the decision?

PROCEDURE

A double blind study was made in the outpatient department of Springfield State Hospital under controlled conditions. Released chronic psychotic patients were continued on medication, generally with the same ataractic drugs they were receiving on leaving the hospital. All patients were observed for a preliminary period of at least 5 months, during which they were seen regularly in clinic visits by a psychia-

trist and examined at least twice by a psychologist; their families or careholders were interviewed at least twice by a social worker. Evaluations made during this period served as a base line. Medication was given in unidentifiable capsules or tablets. The drugs used were chlorpromazine, perphenazine, prochlorperazine, promazine and reserpine.

At the end of the preliminary period one group, continued under the same regimen, constituted the control group. The rest received the same number of unidentifiable capsules or tablets as before but with decreased drug content. Thus, the amount of drug given was unknown to the patient, to the treating physician, the psychologist and the social worker. Patients were assigned to the two groups at random. They were otherwise treated alike, being seen every 3 or 4 weeks by the psychiatrist. After a period of gradual dose reduction (4 weeks to 5 months—usually 2 months) patients in the experimental group were receiving nothing but placebo.

¹ This investigation was supported in part by research grant #MY-5676 (R-1) from the National Institutes of Health, Public Health Service.

² Springfield State Hospital, Sykesville, Md.

From 4 months all patients were formally evaluated by the psychiatrist and the psychologist. Those who were interviewed by the psychiatrist were also interviewed by the psychologist. When a patient relapsed, he was taken out of the study and treated with the drug he had previously received if this had been withdrawn, otherwise with whatever medication of treatment was indicated. In some instances patients were returned to the hospital more often, however, they were restored to their former level of adjustment by resumption (or change) of medication.

This report deals with 90 patients observed for the following periods: 1. All patients: controls and experimental subjects, for at least 5 months; 2. All controls for an additional period of 7 months; 3. All relapsed experimental subjects from the beginning of drug reduction to the time of relapse; 4. All non-relapsed experimental subjects for 7 months from beginning of withdrawal.

Fifty-six patients served as experimental subjects and 34 as controls. Of the total 90 patients, 82 carried hospital diagnoses of schizophrenia (40 paranoid type, 29 catatonic, 13 others), 2 of psychotic depressive reaction and 4 of involutional psychosis. When the experimental period started, the patients had been under medication for various periods; in only 1 patient was this period less than one year; in 66 it was more than 2 years and in 17 more than 3 years.

PRELIMINARY RESULTS

Of 56 experimental subjects, 41 (73%) relapsed within 7 months after start of drug reduction. Seventeen of these relapsed during the period of drug reduction before reaching the placebo stage. Of the 34 control patients, 3 (9%) relapsed. Thus,

during the first 7 months, the percentage of relapses in the experimental group was more than 8 times greater than in the control group.

COMMENT

This preliminary report indicates that medication with ataractic drugs should not be discontinued indiscriminately in chronic psychotic patients after their release from hospital. At present we have no data discriminating between those cases in which ataractic drugs can safely be withdrawn and those in which they cannot. (We hope to be more specific about this point in our final report.) The relapse rate was somewhat higher in patients with a diagnosis of catatonic schizophrenia or "depressive psychosis" (of any type), and in those under prochlorperazine treatment; somewhat lower in those with a diagnosis of schizophrenia other than paranoid or catatonic types and in those under reserpine treatment. There was no significant difference as to sex, age, length of stay in the community or dosage. Those who lived in the community alone, or in foster care, had a slightly higher relapse rate than those who lived with their families. Long hospitalization did not reduce chances for survival in the community. To the contrary, 4 of the 15 patients who weathered the 7-month period had been in hospital more than 10 years.

Preliminary data seem to indicate that the relapse rate continues at about the same level even after the 7 months covered by this report. Therefore, we shall have to prepare our patients for the necessity of long continued medication. If a drug is to be withdrawn, it should be done gradually and under close supervision which should continue for a prolonged period after withdrawal.

ANEMIA AS A COMPLICATION OF PROCLORPERAZINE THERAPY

AMES FISCHER, M.D., AND NORMAN S. GOTTREICH, M.D.¹

Estimates of the incidence of phenothiazine agranulocytosis vary from 1:1000 to 1:150, with the consensus being about

1:700. The presence of anemia as a complication is exceedingly rare, and has invariably been part of a pancytopenia.

The following case is reported as an apparently unique complication of pro-

¹The Langley Porter Neuropsychiatric Institute, San Francisco 22, Calif.

chlorperazine (Compazine) administration, when the patient developed a severe anemia without evidence of granulocytic impairment.

Case Report: A 25-year-old girl was hospitalized on February 7, 1958, in an acute psychotic state. During the preceding 3 years she had received reserpine, promazine, and perphenazine with no untoward results.

The patient's physical history was unremarkable, and there had been no previous anemia. The physical and neurological examinations were normal. The initial blood studies showed: Hgb 13.3, RBC 4.25, PCV 42; WBC 11,000 with 60% PMN's. On March 29th the hemoglobin was 15.1 grams, and studies of liver function and post-prandial blood sugar were also normal.

At no time during the hospitalization was there clinical evidence of blood loss. Menses were described as scanty. Dietary intake was adequate.

After admission, the history of medication is as follows: Amobarbital, 0.1 to 0.2 grams h.s., until March 11th; prochlorperazine, 180 mgm. daily, begun April 3rd; neostigmine (15 mgm.) and methanesulfonate (Cogentin) (1 mgm.), begun April 24th. Weekly leukocyte counts during the period of prochlorperazine therapy ranged from 6500 to 9200.

The patient began to complain of dizziness, weakness, and easy fatigability early in May. On May 16th, 6 weeks after beginning prochlorperazine, the RBC count was 2.68 million, the Hgb 8.4 grams, and the PCV 23. Wintrobe indices were: MCV 85.8, MCH 31.3, MCHC 36.5. All drugs were discontinued approximately 7 weeks after they had been started. At that time the PCV was 24 and the van den Bergh test normal. Weekly blood studies were done thereafter, including a reticulocyte count. Several platelet counts were normal, as were the periodic WBC and reticulocyte counts.

Hemoglobin determinations were 7 to 8 grams until mid-July, when they began to rise. On August 12th the hemoglobin was 9.6 grams. Ferrous gluconate, 300 mgm. t.i.d., was begun on August 28th as a diagnostic measure. However, there was no reticulocyte response, and the iron was discontinued on October 17th. On September 26th the hemo-

globin was 15.1 grams, and returned to normal thereafter.

No bone marrow study was done during the period of the anemia because of the chronic and resistant condition of the patient. However, several special laboratory procedures were performed on July 31st. A red blood cell survival time revealed a normal half-life of 24.5 days. There was no indication of increased destruction of RBC's by the spleen (radioactive spleen-to-liver ratio was normal). The serum iron-binding capacity was normal (402.4 mcg. percent), but the serum iron concentration of 23.65 mcg. percent was markedly low (normal 70-170).

The patient received trifluoperazine, 450 mgm. daily from November 21, 1958, to March 23, 1959, and trifluoperazine (40 mgm. daily) from the latter date until her discharge on August 28, 1959. Both these drugs were accompanied by methanesulfonate, 2 mgm. daily. When discharged she was in excellent health and had a hemoglobin of 14.5 grams.

It would be informative to have had the results of a bone marrow examination. However, the data at hand point most decidedly toward marrow depression, especially since there was no clinical evidence of blood loss, and no reticulocyte response to iron therapy in the presence of a low serum iron concentration. It would be difficult to implicate amobarbital as the offending agent, if only because of the length of time between its use and the appearance of anemia. Neostigmine and methanesulfonate were not given until about a week preceding the symptoms of anemia; moreover, their association with anemias is unknown. Thus, we feel this case to be an unusual toxic complication of prochlorperazine therapy.

SUMMARY

1. A case is presented of anemia attributable to prochlorperazine, without leukopenia or other abnormality of the peripheral blood.

2. The patient subsequently received courses of trifluoperazine and trifluoperazine without complications.

CASE REPORTS

SUICIDE IN IDENTICAL TWINS

DAVID W. SWANSON, M.D.¹

Remarkable similarities in behavior have been reported in twins, but there has been only one documented case of suicide in both members. ¹ The following is a report of concordant behavior in twins, including suicidal attempts (one being successful), occurring during a close interval of time in different circumstances.

From birth until age 25 these twins were not separated. They went everywhere together, received identical scholastic marks, participated in like activities, entered upon military careers together and received all of their promotions on identical dates. Their advancement in the military was very rapid and both were referred to as the finest of non-commissioned officers by their superiors. Direct reference was made to each twin's close attention to details, marked conscientiousness and dependability.

Both were married in their early twenties and had children of approximately the same ages. Twin #1, at age 22 and 24, was hospitalized for complaints of nervousness, anxiousness and "something I couldn't put my finger on." He received electroshock during the initial hospitalization. Twin #2 did not appear influenced by these illnesses, demonstrating jovial, outgoing behavior that had always been more prominent in him than in Twin #1.

At age 28 the twins were separated by differing military assignments. They rarely corresponded and their awareness of each other's activities was indirect and through family correspondence. Their successful army careers continued on different continents, one in Europe and the other in Asia. At age 30, Twin #1, was again hospitalized with complaints of uneasiness, inability to sleep and loss of appetite. He ex-

pressed feelings of guilt, unworthiness, with suicidal intent. One month after admission he broke away from attendants and threw himself beneath a heavy military truck, receiving a serious chest injury. He later stated this was a planned effort at suicide, and there was no cause for question as to the sincerity of the gesture.

The patient's wife was aware of her husband's suicidal attempt; but Twin #2 and the remainder of the family, were only informed that he had experienced another "nervous breakdown."

Approximately 4 months after the onset of symptoms in his brother, Twin #2 was hospitalized because of inability to concentrate, loss of appetite, sleeplessness and something he was going to "straighten out himself." He expressed feelings of guilt but seemed improved after a short hospitalization and was released. He was observed by colleagues to become more quiet and intent. Then, unaware of his brother's suicidal action, this twin 3 months later was found dead by self-inflicted strangulation.

Family History: The father, age 51, once threatened suicide by placing a loaded gun to his head. He was regarded as strict with his children and somewhat excessive in wanting them to excel. The mother, age 54, is described as tolerant, kind and understanding. Both twins were close to their mother and felt she best understood them. A successful, well-adjusted brother completes a family group described as close.

Members of the family felt the twins to be identical. Their features, physical dimensions, expressions and responses were strikingly similar. One of the twins commented, "We looked so much alike, I couldn't tell the difference in our picture."

DISCUSSION

Numerous similarities in achievement, behavior and psychopathology are present in these twins. Features frequently concord-

¹ Staff Physician, Illinois State Psychiatric Institute, Chicago, Illinois. Appreciation is expressed to the Surgeon General's Office, United States Army, for their cooperation.

ant in identical twins have been thoroughly discussed from a genetic viewpoint(2, 3, 4, 5). Conclusions from these extensive studies indicate that the basic personality make-up is largely determined by heredity, and that adaptive failure follows a course primarily genetically determined.

Kallman, in a study of 18 identical and 21 fraternal twins, found they were discordant for suicide with but one exception. This single pair of twins known to have been concordant as to suicide killed themselves 4 years apart(6).

Since the frequency of suicide in the general population is one in 10,000(7), and identical twins represent 0.3% of the population(8), the likelihood of chance concordance for suicide is understandably slight. The foregoing is offered as an instance in which sincere suicidal attempts were made

during the same interval of time by identical twins, in one twin successfully.

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MULTIPLE TICS

DORIS H. MILMAN, M.D.¹

Prompted by the article "A Clinical Study of Gilles de la Tourette's Disease in Children" by Eisenberg *et al.* (*Am. J. Psychiat.*, 115: 8, Feb. 1959) and the exchange of correspondence between Drs. Rapoport and Eisenberg, I am moved to report a long-term experience with a patient with *maladie des tics*.

In 1950 I saw and treated a boy, then 9 years old, who had been afflicted from the age of 6 years with multiple tics, including bizarre body movements and vocalizations. In early childhood he was hyperkinetic, rocked, and banged his head. At 7 years of age he was thought to have chorea and was treated with fever therapy. At 8 he developed severe asthma. When I saw him at 9 years, he was incessantly grimacing, barking, slapping his face, and twitching his neck, shoulders, trunk, and legs. He compulsively verbalized obscenities and gave evidence of obsessive thinking. He had been withdrawn from school because of his bizarre behavior. His somatic activity was so excessive that he was unable to

maintain an adequate caloric intake and was markedly malnourished. An electroencephalogram was normal. Intelligence was in the normal range with evidence of a much higher potential. Projective material pointed in the direction of neurotic development.

I treated the boy with medication (drugs of the amphetamine series) and with weekly psychotherapeutic sessions over a period of 1½ years, with parallel sessions of guidance for the mother. At the age of 11 years 10 months the boy was free of tics, had gained a lot of weight, had no obsessional thoughts, and was attending school. At 13 years he had a religious confirmation without undue reaction.

In February 1959 I received a telephone call from the patient's sister. He had been well through the years, had completed high school, and now, at the age of 18, was in the army. The sister called to tell me that he was being considered for secret intelligence work and to ask if his past history would be a deterrent.

Although many neurotic elements were clearly identifiable in the clinical picture,

¹ 126 Westminister Rd., Brooklyn 18, N. Y.

and became better elucidated in the course of therapy. I cannot be sure that this was purely a functional disorder. There was a history of abnormal moods from infancy. On the other hand, his EEG was normal,

and he made and maintained to date a complete recovery.

I agree with Dr. Eisenberg that a pooling of experiences with this syndrome would be valuable to us all.

FAITH

The universal opinion was that it was right to compel men to believe what the majority of society had now accepted as the truth and, if they refused, it was right to punish them. No one in the dominating party was heard to raise his voice in behalf of intellectual liberty. The mystery of things above reason was held to be the very cause that they should be accepted by Faith; a singular merit was supposed to appertain to that mental condition in which belief precedes understanding.

—JOHN WILLIAM DRAPER, M. D., LL. D.

(History of the Intellectual Development of Europe.
Chapter 10: The European Age of Faith)

I have ministered to the knowledge of the people as far as lay in my power, and I shall continue to do so. The number of public schools has been increased, not only in Italy but in the provinces, and I am turning my whole attention to that higher education which will procure for us capable physicians, architects and expert canal builders; furthermore, as you well know, I have founded the Apollonian and Octavian Library, and I have not neglected to promote the already existing libraries by donations. Yet this kind of solicitude means little to the people; the masses have no desire to be given perception, they want to see strong images whose unequivocal meaning they are able to grasp.

—HERMANN BROCH

(The Death of Virgil:
Augustus speaks to Virgil)



HISTORICAL NOTES

NOTE ON BENJAMIN RUSH

Of the three statues of physicians (Rush, Gross and Hahnemann) which stand in the Capital City, one is of especial interest to members of the American Psychiatric Association, namely that of Benjamin Rush.

Many Washingtonians are unaware of the fact that the "Patron Saint" of the Association has been thus memorialized. If they know of the existence of the statue, they may wonder why it, raised in honor of the Surgeon General of the Continental Army, should stand, as it does, on the grounds of the old Naval Hospital (now the Bureau of Medicine and Surgery) at 23rd and D Streets, N.W.

In view of the fact that Rush was the first American to write on mental disorders, and that his profile appears on the Seal of our Association, the Editor has thought a note, together with a photograph, to be of sufficient interest to warrant publication in the Journal. The author is greatly indebted to Rear Admiral B. W. Hogan, Surgeon General of the Navy and Honorary Fellow of the American Psychiatric Association, for the data on which this note is based.

In 1896 the American Medical Association participated in the establishment of a Rush Monument Committee under the chairmanship of Dr. Albert L. Gihon, then a Medical Director in the United States Navy, and obtained authority from the Secretary of the Navy to erect a monument "upon the grounds facing the United States Naval Museum of Hygiene." The Army had already authorized the erection of a monument to Dr. Samuel D. Gross, near the Army Medical Museum (7th Street and Independence Avenue, S.W.), a fact mentioned by Doctor Gihon in suggesting the Naval Museum site in view of Rush's early advocacy of hygiene. Thus the interests of

the Army and the Navy were balanced!

The committee of the American Medical Association, under the chairmanship of Dr. J. C. Wilson of Philadelphia, through a general appeal for subscriptions, raised the necessary funds (about \$15,000) and had a bronze statue (slightly more than life size), designed by "Mr. Perry of New York," executed. Finally, on June 11, 1904, the monument was unveiled and dedicated. Dr. J. H. Musser, President of the American Medical Association, made an address, Dr. J. C. Wilson delivered an eulogy of Rush, and the President of the United States, Theodore Roosevelt, formally accepted the monument as a gift from the medical profession to the Nation. Among the distinguished guests on that occasion were Dr. William Osler, Dr. William H. Welch, Surgeon General Rixey of the Navy, Surgeon General Wyman of the Marine Hospital Service, Sir Frederick Treves, Dr. Frank Billings, and Dr. H. D. Holton.

The monument stands in a park, on an eminence just north of the original building of the U. S. Naval Hospital, on a base of granite, the base and effigy totalling about 17 feet. The front panel bears the inscription "Benjamin Rush, Physician and Philanthropist, 1745-1813." Proceeding clockwise, the next inscriptions are "Studium Sine Calamo Somnium" (Study without a pen is folly); "The First American Alienist"; "Signer of the Declaration of Independence."

As the photograph indicates, the monument is a worthy memorial to a great physician and patriot and the father of American psychiatry.

Winfred Overholser, M.D.,
Washington, D. C.

COMMENTS

BRAIN AND PERSONALITY

The year 1959 was the centennial of the publication of Darwin's *Origin of Species*. All over the world learned societies have marked the event with conferences on evolution. Knowledge of the evolution of the brain has advanced in the recent decades, and physicians interested in brain and mind can learn much from the report of these meetings.

Brain size is too often emphasized as important for intellectual capacity. Of course, a certain minimum size is necessary to include all the nerve cells and fibres necessary for the processes of learning and adaptation; below that minimum there is functional defect. Normal brains of *Homo sapiens* vary from about 1000 to 2000 grams. The brain of Anatole France weighed only 1017 grams, and that of Bismark weighed 1807. In any one species, size of brain varies directly with size of body; man has from 230 to 250 grams of brain per foot of his length. But between species relative size of brain is of interest only because the weight of the various parts of the brain appear to be positively related to the importance and complexity of the functions they control. The relation of brain weight to the total weight of the body is too variable to be significant. Compared to body weight, the brain of a Japanese mouse is over twice as big as that of a man!

The development of a head-ganglion in the nervous system had been going on for many millions of years before a vertebrate developed a brain with even a primitive resemblance to the brain of a mammal. Paleontology gives evidence by endocranial casts that a reptilian ancestor of present day mammals had fore-brain, mid-brain, cerebellum and medulla arranged in a form resembling that of modern reptiles. This progenitor of ours lived about 200 million years ago and the first primate probably appeared about 60 million years ago. It took all this time to evolve the brain that was to become human about half a million years ago.

But, as Rüger said to Tilly Edinger,¹ it is impossible for one to grasp such figures, so he translated them into terms of one year: There has been life on this planet for about 2,000 million years; if one represents this as twelve months, fish developed in October, reptiles in early November, mammals in late November, and man at eleven-thirty on the night on December 31st! In other words, man has existed for only $\frac{1}{2}$ an hour according to this scale. With the vertebrate brain evolving since October, one cannot expect much structural evolution to have taken place in the last half hour of December.

The human brain had already attained its present state of anatomical complexity and functional potential in the Stone Age, some 50 thousand years ago. The evidence for this is found in paleolithic skulls and artefacts. The evidence from ancient history indicates that men like Pythagoras in the sixth century B.C. and Plato in the third, had brains just as good as present day savants. In fact the very formation of the first language was a constructive intellectual feat of the first order, and this was accomplished long before recorded history began. The fact that neolithic man did not produce an atomic bomb or write *The Origin of Species* was not because he did not have the brain, but because the experience and culture of a few thousand years was needed before man could accumulate the data for such intellectual feats. It is even probable that the functional potential of the human brain has never been fully used, the limit has never been reached. Occasional individuals have perhaps approached it. They are scattered in time all over the span of recorded history, and the earliest of them seem to have been about as superior to common man, as the latest. One might ask how it happened that such a marvelous instrument as the brain was developed so long before it could be fully exploited. The

¹ Personal communication.

answer is that it takes long training to use any instrument up to capacity. Many organs of many vertebrates have reached an evolutionary development which surpassed environmental needs.

The rapid civilization that has taken place during the known history of man is due to social evolution, not to anatomical evolution. When man began to master his environment he set aside the laws of natural selections. The "fittest" was no longer the best adapted to environment, but the one who circumvented the environment and changed it to his advantage. With environmental pressure removed "natural" selection has stopped changing man's brain and cultural selection has exploited the brain with extraordinary speed and success.

The resulting behavior patterns are not transmissible, but extremely effective in dividing the species of man into many differing groups.

All this indicates that *Homo sapiens*, in all his races, has an essentially similar brain. Given an equal chance for education the young of any race can equal in intellectual capacity that of any other. On leaving Patagonia, Darwin wrote in his diary of the voyage of H.M.S. "Beagle":

"It was quite melancholy leaving our Fuegians amongst their barbarous countrymen—In contradiction of what has often been stated, three years has been sufficient to change savages into, as far as habits go, complete and voluntary Europeans."

Stanley Cobb

HUMAN BETTERMENT

There are societies and organizations galore whose activities are concerned with human betterment *in our day*, and whose existence bears witness to the urge that is inherent in so many of us to do something to help our fellows. There is a large body of good intention, backed by tradition and culture, and supported by wealth, whether of the individual or of the state, available for social hygiene. The question arises, is all this expenditure of good endeavor directed into the channels which are calculated to produce the most fundamental, and the most enduring, benefits? I do not think that they are. This does not mean that schemes for social hygiene are intrinsically unhelpful, still less does it mean that they should not be encouraged. All it means is that, in the view of the eugenicist—a view which I share with utter conviction—the economic advantages, using the term in its widest sense, lie with efforts made towards racial betterment rather than with social service in a particular generation.

—LORD HORDER

PHILANTHROPY

Have not hosts of intelligent and highly educated men and women—penologists, sociologists, psychologists, psychiatrists, jurists, and sheer philanthropists—labored at prison reform and refined the treatment of the delinquent until it may be said that the convicted felon receives more social consideration than the law-abiding working man? That would be a question which would not justify an unequivocal answer on the part of counsel for the defence.

—EARNEST A. HOOTON,
Former Professor of Anthropology,
Harvard University.

CORRESPONDENCE

INTRAVENOUS PENTOTHAL WITH ECT

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: The question of using intravenous Sodium Pentothal in electroshock therapy when Anectine is used to prevent the traumatic effect of the convulsive movement, is still controversial. In the experience of the writer, its use is not necessary if, following the injection of Anectine, a short preliminary shock is given. This is found to be efficient in eliminating anxiety and creating an amnesia for the whole treatment.

The method is as follows: The patient is placed on the bed; the current is turned on. If Reiter's Molac No. 2 is being used, all that is necessary is to give the Anectine, then by pressing the button, give the shock as prescribed below. If Reiter's cerebral stimulator is used, the current is turned on with the lower right hand button in the "sample" position. The current is set at the maximum. The shock is given by momentarily switching the lower right hand button to "treat," and then switching again to "sample."

After Anectine is administered, there is a pause of one or two seconds, then the preliminary, "anesthetic" shock is given. If the Molac machine is used, the button is pressed for a period of one second; with the cerebral stimulator, approximately two seconds. This produces a degree of un-

consciousness. After 10 to 12 seconds the treatment shock is administered in the usual manner.

Occasionally, with the initial shock, a patient may cry out, fling his arms about, or half raise himself from the bed. If left alone, this is followed by subsidence into the semi-conscious state, in which the patient lies quietly, breathing normally, not responding to demands, etc. Most patients react to the preliminary shock by immobility and semi-consciousness.

The rationale of waiting for a longer period after Anectine is given is not clear. The necessity for fibrillation to take place, thus prolonging the period after Anectine, may initiate some anxiety, and in the opinion of the writer, does not create as complete an anesthesia nor amnesia. Some patients, not all, recall the anxiety and may complain of having "felt" the shock. This may account for the need of using intravenous pentothal. Eliminating intravenous Pentothal is perhaps of not too great importance, except in uncooperative and disturbed patients. However, its use does add some additional respiratory risk that can be avoided by the procedure outlined.

Walter A. Thompson, M.D.,
Clinical Director,
Pinewood, Katonah, N. Y.

PROBLEMS OF PROGRAM ANALYSIS IN MENTAL HEALTH RESEARCH

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: The American Journal of Psychiatry for October, 1959 (Vol. 116, No. 4), carried a "Comment" by Charles E. Goshen, M.D., titled "Interdisciplinary Trends in Mental Hygiene Research and Training." Dr. Goshen reports his classification (by methods used and by professional specialties of principal investigators) of 247 research grant proposals in the field of mental health

receiving U. S. Public Health Service support in December 1958.

The erroneous impression might be gained from Dr. Goshen's article that his break-downs are based on the total number of grants active in December 1958. It should be made clear that the mental health research grants described by Dr. Goshen were less than one third of those receiving U. S. Public Health Service support at that time. While it is difficult, in retrospect, to

identify the exact number of active grants at any point in time, the approximate number for the month of December, 1958, was 825; analysis of the entire body of data might yield quite different results. Furthermore, Dr. Goshen's data were derived from sources other than the complete files at the National Institute of Mental Health.

To a degree, any general break-down of the content of a large research program must inevitably result in arbitrary categories with some considerable overlap among them. Thus, for example, Dr. Goshen's 21-way classification by *methods used* includes the following: "psychological testing," "psychotherapy," "psychopathology." Clearly, these categories do not comfortably belong within a single dimension; only one of them (the first) can be regarded as a method. More important, a number of studies may have all 3 ingredients—for example, a study of the interaction between therapist and patient, in which a battery of psychological tests is used as a method to measure the variables under investigation. Does such a study belong under

"psychological testing" or "psychotherapy" or "psychopathology?" The decision can be dangerously arbitrary.

Earlier this year, the Research Grants and Fellowships Branch of NIMH initiated a detailed analysis of the entire program of research under its sponsorship which, it is hoped, will overcome many of the difficulties inherent in a global, "one-shot" classification scheme. A large-scale coding program is under way through which detailed data about each project are being extracted and stored for analysis via electronic machine methods. By recording hundreds of items of information about the content and methodology of each project, it will be possible later to sort and combine various "bits" of data in ways permitting a variety of analyses of the overall program. The initial body of project data now being codified are all those which received NIMH support during the fiscal year 1959.

Philip Sapir, Chief,

Research Grants and Fellowships Branch,
National Institute of Mental Health,
Bethesda, Md.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: I have recently had occasion to speak with Julius Segal, Ph.D., who has begun the analysis of the NIMH data which is referred to in Dr. Sapir's comment. My note in the Oct. 1959 issue of the Journal was a preview of this analysis, as interpreted by a psychiatrist. When the NIMH report is completed it will most likely represent a different type of interpre-

tation, and this will probably be of the sort which could be most appropriately called "interdisciplinary." It will undoubtedly be much more sophisticated and impressive than my feeble sample. Let us hope that it will also be more accurate. The much greater investment in funds and personnel should make this hope a certainty.

Charles E. Goshen, M.D.,
Bethesda, Md.

SENSORY DEPRIVATION

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: I am writing to you in connection with what appeared as a "scientific negligence" in the otherwise excellent article of Dr. Rosenzweig on "Sensory Deprivation and Schizophrenia" in the October issue of the JOURNAL.

Dr. Rosenzweig seems to have been unaware of the first studies on so-called sensory deprivation in mental patients, which were realized at the Allan Memorial Institute under my direction in 1954. The first of these studies was presented at the Society of Biological Psychiatry in 1955 and subsequently published in 1956 in Dis.

Nerv. Syst., 27 : 117. This was followed by three other reports, two of which have been published : Can. J. Psychiat., 1 : 60, 1956 and Dis. Nerv. Syst., 18 : No. 8, 1957. One report was presented at Symposium of Sensory Deprivation Harvard Med. School in June 1958.

The main reason for my bringing this matter forward is that several of the U. S. authors, who were well aware of the experi-

ments at the Allan Memorial Institute have neglected to mention in their published reports the above mentioned studies which had preceded their experiments and had tackled the problem from a different angle and for a different purpose.

H. Azima, M.D.,

Assistant Professor of Psychiatry,
Allan Memorial Institute,
Montreal, P. Q.

REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : Thank you for sending Dr. Azima's letter.

I am of course familiar with the important work of Dr. Azima. I regret that Dr. Azima feels his work has been neglected in the United States, but I do not plead guilty to "negligence." There was no attempt in my paper to make a complete review of all work done on sensory deprivation. Had this been the case, many other authors would also have claim to Dr. Azima's complaint.

The intent of that portion of my paper given to a review of experimental literature was rather to cite some of those experiments in which symptoms characteristic of schizophrenia were induced by sensory deprivation in otherwise "normal" people. Dr.

Azima, on the other hand, has been using perceptual isolation as a therapeutic technique with mental patients who already demonstrate these symptoms to some degree. As Dr. Azima may recall, I tried to point out this distinction during the discussion of his fine paper at the Harvard Symposium.

I trust that the publication of the references cited by Dr. Azima in his letter will enable many more people to become acquainted with Dr. Azima's worthwhile efforts in this field, and thus perhaps correct what Dr. Azima considers to be an injustice.

Norman Rosenzweig, M.D.,

Assistant Professor of Psychiatry,
University of Michigan,
Ann Arbor.

BASIS OF ETHICS

Out of one hundred human beings fifty-one will be found in the long run on the side of the right.

—OLIVER WENDELL HOLMES

NEWS AND NOTES

ALFRED KORZYBSKI MEMORIAL LECTURE.

—The ninth annual memorial lecture sponsored by the Institute of General Semantics was given by Warren S. McCulloch at the Plaza Hotel, New York, March 12, 1960. Dr. McCulloch is at the Research Laboratory of Electronics of the Massachusetts Institute of Technology and was formerly at the College of Medicine, University of Illinois.

INTERNATIONAL CONFERENCE ON GENERAL SEMANTICS, 1960.—The conference will be held July 31-August 4, 1960 at the University of Hawaii, Honolulu. Information may be obtained from the Institute of General Semantics, Lakeville, Conn.

SECOND INTERNATIONAL CONGRESS OF GROUP PSYCHOTHERAPY.—The papers given at the Congress which was held in Zurich, August 29-31, 1957 have been published by S. Karger A.G., Basel, Switzerland. There are contributions by well-known representatives of various therapeutical orientations as well as a brief outline of the first Congress held in Toronto, in 1954. The papers are in French, English or German. The cost of the volume (pp. 596) is Sfr. 85.

THIRD WORLD CONGRESS OF PSYCHIATRY, FIRST ANNOUNCEMENT.—The Congress will be held June 4-10, 1961 in Montreal, Canada under the auspices of the Canadian Psychiatric Association and McGill University. Those wishing to present papers should communicate with the General Secretary, Dr. Charles A. Roberts, Allan Memorial Institute, 1025 Pine Ave. W., Montreal 2, P.Q., Canada, by September 1, 1960. The official languages of the Congress are English, French, German and Spanish. The executive committee are: D. Ewen Cameron, M.D., Chairman; Lucien La Rue, M.D., Vice-Chairman; A. E. Moll, M.D., Deputy Vice-Chairman; Baruch Silverman, M.D., Chairman, Arrangements Committee; C. A. Roberts, M.D., General Secretary; Camille Laurin, M.D., Treasurer. The second an-

nouncement giving detailed information will be mailed to those interested in September, 1960.

UNIVERSITY OF CHICAGO RORSCHACH SEMINARS.—The Department of Psychology, University of Chicago presents two Rorschach Seminars, July 1960:

I. *The Foundations.* Basic problems of administration. Processing the associations. Psychologic significance of the test variables. The whole personality in the Rorschach test. July 5-9, 1960.

II. *Advanced Clinical Interpretation.* Overt symptoms and their underlying source traits as leads to diagnostic differentiation. The problems of differentiation: neurosis or schizophrenia; organic or psychodynamic reaction patterns. Schizophrenia in children. Implications for treatment. July 11-15, 1960.

Doctor S. J. Beck will conduct both seminars. For information write to: Rorschach Workshops, Department of Psychology, University of Chicago, Chicago 37, Ill.

THE FIFTH INTERNATIONAL POLIOMYELITIS CONFERENCE.—The conference will be held in Copenhagen, Denmark, July 26-28, 1960 under the sponsorship of the National Foundation and the Danish Infantile Paralysis Association. The general chairman is Dr. E. Juel Henningsen, Deputy Minister of Health of Denmark.

Chief attention during this conference will be given to the prevention of poliomyelitis. The opening section will deal with overall viruses 1960. The second section will be a discussion of the present status of the killed or inactivated virus vaccines and the third section will deal with all aspects of the live attenuated virus vaccine.

Further information may be obtained by writing to Mr. Stanley E. Henwood, Executive Secretary, International Poliomyelitis Congress, 120 Broadway, New York 5, N. Y.

AUSTRIAN MEDICAL SOCIETY FOR PSYCHOTHERAPY.—On January 26, 1960, the Society

held its 10th anniversary meeting in the auditorium of the Vienna Polyclinic. Professor Dr. Viktor E. Frankl was elected to the presidency.

In the following scientific session, an address on "Logotherapy" was given by Dr. Donald F. Tweedie, chairman of the psychological department of Gordon College, Mass. Professor Tweedie is spending a sabbatical year at the Vienna Polyclinic where he is studying the psychotherapeutic method developed there by Professor Frankl.

DR. FREDERICK H. PACKARD.—A former Medical Superintendent of McLean Hospital, Dr. Packard died in July 1958. He had been a member of the McLean staff for fifty-two years.

Born in 1875 he was graduated from Harvard University in both arts and medicine, going to McLean directly after his internship. During this long period of service he had one academic year's leave of absence for study at the University of Munich, after which he served for a period as pathologist at McLean. In 1919 he was appointed Medical Superintendent, and when he retired ten years later he was named Superintendent Emeritus.

UNIVERSITY OF VIRGINIA SCHOOL OF MEDICINE LECTURES.—Under the sponsorship of the Department of Neurology and Psychiatry in the medical school auditorium:

On February 28 at 5 p.m. Dr. J. H. Quastel, Professor of Biochemistry at McGill University and Director of McGill-M.G.H. Research Institute in Montreal, will talk on "Biochemical Aspects of the Brain in Health and Disease."

On March 28 at 8 p.m. Dr. Joel Elkes, Chief of Psychopharmacology Research Center, National Institutes of Mental Health, will talk on "Psychopharmacology: Present Day Problems and Future Trends."

A. E. BENNETT AWARD.—The Society of Biological Psychiatry offers an annual award made possible by the A. E. Bennett Neuropsychiatric Research Foundation. The award will consist of \$500, part of which is to be used for traveling expenses to the

meeting. It will preferably be given to a youngish investigator and not necessarily a member of the Society of Biological Psychiatry, for work recently accomplished and not published. The paper will be read as part of the program of the annual meeting of the Society and will be published with the other papers read at that meeting in the book: *Biological Psychiatry*, Volume III. The honorarium will be awarded at the annual banquet. Please submit papers in quadruplicate to Harold E. Himwich, M.D., Chairman, Committee of Award, Galesburg State Research Hospital, Galesburg, Illinois. Deadline for manuscripts is April 30, 1960.

AMERICAN SOCIETY OF GROUP PSYCHOTHERAPY.—The 19th annual meeting of the Society will be held at the Barbizon Plaza Hotel, New York City, from April 27 to 29, 1960. Kindly mail papers to P.O. Box 311, Beacon, N. Y.

LINDAU PSYCHOTHERAPY WEEK.—The 10th Psychotherapy Week at Lindau (B) under the direction of Dr. Helmut Stolze will be held May 2-7. The main theme will be group therapy. Films illustrating psychotherapy will also be shown. Training demonstrations will be given during the following week, May 7-14.

For information address the Sekretariat der Lindaur Psychotherapiewoche, München 2, Dienerstr. 17.

MENTAL DEFECT DUE TO PHENYLKETONURIA.—Dr. Paul H. Hoch, Commissioner of Mental Hygiene, announced that New York State will provide supplies of the necessary diet for patients requiring financial assistance. The diet will be supplied for all children up to the age of 5 suffering from the disease who are expected to respond to the treatment. An estimated 20 new cases of this rare form of mental deficiency occur each year in New York State.

The operation of the pilot program, believed to be the first state project of its kind in the country, will be centered at Letchworth Village, Thiells, under the direction of Dr. George A. Jervis. All cases will be reviewed in the project center, but

the general medical supervision of the patient will be in the hands of the family physician. Supporting laboratory services will be provided wherever requested.

Information on the service may be obtained from Dr. Jervis at Letchworth Village, Thiells, N. Y.

JOINT INFORMATION SERVICE PUBLICATION.—*Fifteen Indices* has been issued by the Joint Information Service of the APA and NAMH. The tables indicate how all the states stand in relation to one another according to a mental health index or an index concerned with state and local government finances. Bar graphs for each state and the District of Columbia indicate where each state stands in relation to the U. S. average of the 15 tables. There are comparative figures for 1956 and 1958. This aid in reviewing state and local mental health and hospital programs is available at \$2.00 per copy from the APH-NAMH Joint Information Service, 1700 Eighteenth St., N.W., Washington 9, D. C.

PSYCHOLOGICAL PROBLEMS OF MAN IN SPACE FLIGHT.—An article bearing this title by George A. Peters of the Douglas Aircraft Company, Inc., appeared in the March, 1960 issue of "Astronautics." In it he discusses some of the psycho-social-sexual problems which may occur in manned space flight and points out that careful selection of crew members is necessary because of the severe problems which may be caused by isolation, or close confinement with minimal environmental variety or activity or close confinement requiring constant vigilance or activity.

The article suggests that a psychiatrist should be included in the crew because of the psychological problems arising and to provide medical care in case of illness or accident. In space flights which are of a scientific nature, the psychiatrist could also be engaged in research.

liver the Sandor Rado Lectures at the Columbia University Psychoanalytic Clinic on April 29 and 30. His titles: Anxiety and Grief in Infancy and Some Problems of Mourning.

DR. JONES APPOINTED SUPERINTENDENT OF BUTLER HEALTH CENTER.—The appointment of Dr. Charles H. Jones, Superintendent of Northern State Hospital, Sedro Woolley, Washington, as Superintendent of the Butler Health Centre, Providence, Rhode Island was announced February 23 by Mr. Alfred H. Joslim, President of the Board of Trustees. Dr. Jones will assume his new post May 13, after having served as Superintendent of Northern State Hospital for more than ten years.

LAUREL (MD.) SANITARIUM FIFTY-FIFTH ANNIVERSARY.—The establishment of the Laurel Sanitarium fifty-five years ago recalls one of the "wonder cures" that have lived their day and passed away. In fact the birth of the sanitarium and the death of the "Keeley Cure" for alcoholism, alias the "Gold Cure," coincided, and Dr. Jesse Coggins, founder of the sanitarium was able to purchase at a bargain price the near-by Keeley Institutes, a summer hotel accommodating some 60 guests, and transport it bodily with all its equipment to his property, where it forms an essential unit in his institution.

Originally operating it for all types of psychiatric illness, Dr. Coggins has of late years restricted admissions to his hospital to women requiring geriatric care and treatment. It is the only facility of its kind in the State of Maryland.

UNIVERSITY OF VIRGINIA SECOND BEHAVIORAL SCIENCE SYMPOSIUM.—The Symposium at the University of Virginia will be held April 4 and 5, 1960. Under the chairmanship of Arthur J. Bachrach, it will be on "The Lawful Nature of Behavior," and will include papers by B. F. Skinner, Donald B. Lindsley, Ernest R. Hilgard, William A. Hunt and Carl Pfaffman. Information regarding registration, housing, and fees may be obtained from Mrs. Katherine Tiffany, Secretary, Division of Behavioral Science,

COLUMBIA UNIVERSITY DEPARTMENT OF PSYCHIATRY.—John Bowlby, M.D., Deputy President, British Psychoanalytical Society, and Director, Department for Children and Parents, Tavistock Clinic, London, will de-

University of Virginia School of Medicine, Charlottesville, Va.

CONGRES DE PSYCHIATRIE ET DE NEUROLOGIE DE L'ANNEE FRANCAISE. The congress will hold its fifty eighth session at Lille, France, from June 27 to July 2, 1960. The division of psychiatry will consider "New Clinical and Biological Studies in Discordant Syndromes" (P. Abely and P. Delaville, Paris), the neurological division, "From Somesthesia to Somatognosis" (F. Lhermitte, Paris) and the therapeutic division, "The Utilization of Analytic Data in Current Psychotherapy" (M. Eck, Paris). Information may be obtained from Docteur Paul Cossa, Le Secretaire General, 29, Boulevard Victor-Hugo, Nice, France.

FIRST EDITION OF MEDICAL DIRECTORY OF SOUTH AFRICA.—The printing of the first edition of this directory is nearing completion. Compiled with the co-operation of the Medical Association of South Africa, it contains detailed professional biographies and provides the only compendium of medical practice—administration, schools, research, and hospitals—in South Africa. The retail price is \$7.50 plus postage. As the Directory is being printed to order, those desiring copies are requested to order in advance from Dr. B. Crowhurst Archer, Editor, Knox Printing Company (Pty.) Ltd., P.O. Box 1509, 30-36 Baker Street Durban, Natal, South Africa.

INTERNATIONAL CONGRESS OF INDIVIDUAL PSYCHOLOGY.—The congress will take place from August 28 to September 1, 1960, at the Neuropsychiatric Clinic in Vienna. The theme of discussion will be "Theoretical and Practical Implications of Social Interest." Professor Dr. Hans Hoff, Chairman of the Department of Neuropsychiatry of the Vienna University, will be honorary president of the Congress; and Dr. Alexandra Adler, New York, President of the International Society for Individual Psychology,

will preside. For further information address Dr. Walter Spiel, International Congress for Individual Psychology, Neuropsychiatric Clinic, Lazarettgasse 14, Vienna 9, Austria.

SECOND UNITED NATIONS CONGRESS ON THE PREVENTION OF CRIME AND THE TREATMENT OF OFFENDERS.—This international congress will be held at Church House and Carlton House, London, England, from August 8 to 20, 1960. One of the topics for discussion will be "New Forms of Juvenile Delinquency: their origin, Prevention and Treatment." The government of the United Kingdom, acting as host, will sponsor an exhibition, visits to institutions, and lectures. Participants will include members officially appointed by their governments, representatives of specialized agencies of the United Nations, and individuals having a direct interest in the prevention of crime. Applications for membership should be made not later than April 15, 1960. For information write to the Chief, Section of Social Defence, United Nations, New York 17, N. Y.

THE ACADEMY OF PSYCHOANALYSIS.—The annual meeting of the Academy will be held May 7-8, 1960 at the Hotel Claridge, Atlantic City, N. J. There will be morning and afternoon sessions on both days. Inquiries may be addressed to Joseph H. Merin, M.D., Secretary, The Academy of Psychoanalysis, 125 East 65 Street, New York 21, N. Y.

DEAR MEMBER: The 1960 convention provides new air-conditioned—sound proof meeting rooms plus speeded up registration procedures and smoother direction. Name "Talent" features wordless banquet for entertainment. Ladies arranging fashion show—brunch and special luncheon. Multitude of modern hotel accommodations near by. Innovations in program make Atlantic City a must.

THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.—The following candidates were certified by this Board after examination in New York, N. Y., December 14 and 15, 1959.

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*Denotes Supplementary Certification

"ARCHAIC AND MISCREANT BELIEFS"

Worry about the problems of sin, of the origin of evil, and of predestination is, as Emerson said, evidence of "the soul's mumps, and measles, and whooping-cough." People who worry about these questions need to consult a physician, and not a theologian, unless he happens to be one of that small group of clergymen who clearly recognize the biological significance of religious problems.

—STEWART PATON
 (Signs of Sanity, 1922)

PROGRESS

Progress is not an illegitimate word, but it is logically evident that it is illegitimate for us. It is a sacred word, a word that could only rightly be used by rigid believers and in ages of faith.

—G. K. CHESTERTON

OFFICIAL REPORTS

SUMMARY REPORT OF THE FIRST INTERNATIONAL MEDICAL CONFERENCE ON MENTAL RETARDATION

Dedicated to the purpose of appraising problems in the field of mental retardation, the Conference, held at Portland, Me. from July 27 to 31, 1959, marked the first of its type to be held in the world. As evidence of the widespread interest, representatives from 33 foreign countries and from 40 states of this country, attended. Although the Conference was primarily directed to physicians, the final session was opened to related professions. Total Conference attendance was a little over 600. Wives and families registering for social activities with the Women's Auxiliary of the local medical association, which served as Hospitality Committee for the Conference, totaled 103.

In addition to pointing up the need for continued research in the field of mental deficiency, one of the principal aims of the Conference was to continue the work begun in this direction through a permanent organization. To this end, a small group of physicians representing leading countries of the world met as a Steering Committee, chaired by H. Bair, M.D., Parsons, Kan., U.S.A., early in the Conference period, to consider the next step. After thorough deliberation, a permanent committee was organized and the decision made to hold the Second International Medical Conference on Mental Retardation in Vienna, Austria, in 1961. Dr. K. Kundratitz of that city was named chairman. Other committee members appointed were: J. D. Spillane, M.D., Cardiff, Wales; H. Bickel, M.D., Marburg, Germany; H. Asperger, M.D., Innsbruck, Austria; T. Arneus, M.D., Stockholm, Sweden; S. Nielson, M.D., Copenhagen, Denmark; G. Frontali, M.D., Rome, Italy; F. Groer, M.D., Warsaw, Poland; A. Minkowski, M.D., Paris, France; A. Chattas, M.D., Cordoba, Argentina; P. Bowman, M.D., and H. Mautner, M.D., Pownal, Me., U.S.A.

The Conference program, designed around the daily presentation of scientific

papers in plenary sessions, followed by a discussion period, featured 35 speakers. Summary highlights of these papers included: Reports about pathological findings in the brain of mentally retarded patients (P. Yakovlev); malformations produced in animals by abnormal food, poisons, or other types of damage (J. Warkany); inborn metabolic errors explained by abnormalities in the enzyme function (D. Y. Y. Hsia); report on experiments concerning autonomic regulation in the brain (E. Gellhorn); pathological findings in birth trauma and asphyxia (P. Schwartz); relation of breathing in the newborn to the acid base equilibrium and its importance for asphyxia (L. James); observations in differences of metabolism and oxygen utilization in animals before and after birth (W. Himwich); sequels of infectious diseases of the central nervous system in respect to mental development (H. Asperger); prenatal infections and other results in mental development and malformation (J. Sutter); a report on the present knowledge of metabolism and the amino acids and the diseases which are now considered to be related to abnormalities in the amino acid metabolism (R. Paine); a survey of the chemical background of lipid thesauroses including gargoylism (P. Diezel); a report on metabolism of copper, iron, and lead and about related diseases with mental deterioration (J. Cuming); erythroblastosis as base of mental retardation (W. Zuelzer); recent findings of chromosomal abnormalities in mentally retarded persons (P. Polani); childhood schizophrenia (L. Bender); mongolism (C. Benda); and many others.

Scientific exhibits portrayed the subjects of phenylketonuria (Centerwall); a simple method for the detection of amino-aciduria (Chadimi and Schwachman); dietary treatment of phenylketonuria (Paine); some rare types of mental deficiency (Pine-land Hospital and Training Center); toxoplasmosis (Barr); atarax in the treatment

of mentally retarded children (Carter); a monograph on the region of the brain known as "Speltz" or "epilepsy syndrome" (Holzer); a significant collection of publications on many aspects of mental deficiency. These, together with several commercial exhibits, attracted the attention of a large group of delegates during the visiting periods accorded for this purpose at each session.

Daily film sessions averaged an attendance of some 100 delegates.

The Conference closed on the following note: the unanimous adoption by the delegates of a resolution to "recommend to all Governments of the World that sufficient funds

be provided in their annual budgets for improvement and deepening of our present knowledge of Mental Retardation, and to further its medical treatment, its social and educational needs, its research, and to create a better understanding for the psychological, social, economic, legal and medical needs of the mentally retarded individual."

The Conference proceedings, including the printing in full of the scientific papers presented as well as the ensuing discussions on these, will be published and should be available in the spring of 1960.

Howard V. Bair, M.D.,
Parsons, Kansas.

RELATIONS BETWEEN PSYCHOLOGY AND PSYCHIATRY

The report which follows has been authorized for publication by the Executive Committee of the American Psychiatric Association at its meeting of January 5, 1960 in New York City.

It will also be published in *The American Psychologist*, the official journal of the American Psychological Association. Since the meeting referred to here, we have held

another joint meeting of these two committees to discuss further ways of establishing and maintaining liaison between our two professions at a dignified level as colleagues in allied scientific disciplines.

Joel S. Handler, M.D.,
Chairman, Committee on
Relations with Psychology

JOINT REPORT ON RELATIONS BETWEEN PSYCHOLOGY AND PSYCHIATRY

The new Committee on Relations with Psychology of the American Psychiatric Association met in Chicago on May 2-3, 1959 with the Committee on Relations with the American Psychological Association of the American Psychiatric Association. In view of the recent history of strained relations between the two parent groups, the atmosphere of this Chicago meeting was at first somewhat contentious and argumentative.

The psychologists were informed for the first time of the events leading up to the 1957 action of the Council of the American Psychiatric Association, upon recommendation of the Assembly of District Branches, to rescind the agreement between the two parent groups that certification was an acceptable form of legislation for psychology.

The psychiatrists were informed of the extended history that led to the action of the Council of Representatives of the American Psychological Association at its September 1958 meeting, and published in the December 1958 issue of the *American Psychologist*.

Members of both committees felt that the Newsletter report of the American Psychiatric Association under date of December 14, 1958 had not clearly interpreted or defined the areas of agreement and disagreement between the two parent groups. This present report is intended to clarify the issues, representing as it does a joint report of the two committees.

The members of both committees felt it essential to re-establish more effective communication in order to avoid a continued

saline quarrel that might eventually discredit both parent groups. The public need is such and the professional manpower problem is such that both parent groups cannot fail to recognize the legitimate interests of society as a third party in their negotiations and in their interprofessional relations.

Some part of the confusion and conflict appears to derive from a real ignorance on the part of psychiatrists and psychologists of the functions, roles, and activities in each other's fields. A few statistics about the memberships of the parent groups are relevant in clearing up this area of misunderstanding.

For example, the American Psychological Association presently numbers somewhat over 17,000 members, of whom 55% presently hold the Ph.D. degree; among the remaining 45% are many who are in the process of completing this earned degree. Slightly under one-half of this total membership find their primary employment in college or university appointments; an additional 35 to 40% are employed by the Federal Government, state or local governments, or by non-profit organizations including private hospitals and clinics. It is estimated that less than 5% would be found to be engaged in full-time private practice. The field of clinical psychology is the specialized interest of a large number engaged primarily in institutional employment. It is not known what percentage are in part-time private practice of psychotherapy.

The American Psychiatric Association has 10,500 members. A statistical survey of 10% of the membership this year shows that 63% treat private patients. Of this number, 14% list no other professional activity, but 40% who say they are in "full-time" practice do hold academic or clinic or consultative positions of a service nature, and 3% see only occasional consultations. Sixteen per cent of the total membership work solely in hospitals, 13% engaging exclusively in public hospital work, but actually 30% of the members do some work in public hospitals. One third of the membership hold academic appointments; 25% work in out-patient clinics or social agencies; although only 3% do so on an exclusive basis. During

the years 1956 to 1959, the membership has increased 21% while the population increase per member has been 17%.

To highlight the discussions the members covered at this joint meeting appear in numbered form:

1. Regardless of the recent history of interprofessional relations, the basic social issues remain clear to the members of both committees. These social issues are the problems of collaboration and supervision between psychiatry and psychology in research, in graduate and professional education, in psychotherapy, and in practice of the respective professional specialties whether this practice be private, group or institutional. These are the problems which must be solved with dignity and with integrity for the members of both groups and for the society which is served by both groups.

2. There was considerable discussion of the fact that in practice, under the duress of extremely heavy case loads, neither psychiatry nor psychology has always done an adequate job of supervision and training. Because of the pressure and the need for psychotherapy some individuals with less than adequate training are nevertheless encouraged to enter private practice prematurely. Instances were cited where psychiatrists too were deemed responsible for encouraging some psychologists to do this, and failing to provide adequate collaboration or supervision to meet the standards of either parent organization. Several psychologists felt that if there was more of a trend to private practice by their group it was of concern to them because it might vitiate their traditional academic and research position. Yet both groups recognized that there is a public demand for more service which must be met. There was some discussion about the variable quality of training in psychotherapy of both psychiatrists and psychologists, and further of the dearth of published data on the supervisory process for either group. Here was an area where further collaborative research was indicated.

3. The psychiatrists felt that the statistics presented for employment of psychologists were not really indicative of the trend to-

and strongly favored in the past a general approach that would create common ground between the two professions, especially in the areas of the practice of psychiatry. Some would say that this kind of professional compromise was not that wise, and that the two professions were not yet ready. The participants in this report feel that there is an urgent necessity of this kind, and that the two groups have now an element of agreement which would make it most desirable to meet all others, state society or otherwise, in an organized and reliable and practical meeting relationship. The report and other forms of internal communication from these two areas of disagreement, both groups felt strongly that a formal effort must be made on the effect of present legislation on the movement to unite practice. The American Psychological Association has already made this a matter of policy.

6. The groups clearly recognized the importance of the psychiatrists' concern for the medical protection of individuals. This concern was not only with respect to specific legislative laws but also with respect to the broader issues involved in both groups, such as the weighting of the effects of legislation as compared to those of standards, enforced and enforced within a profession. One group was another problem that the two groups differed on in opinion, but both agreed that there was insufficient mutual confidence at the present time to assess the effects of legislation. The ultimate solution is in part, one of proper understanding and collaboration between psychiatrists and psychologists, and in part, one of recognizing the broad responsibility that any professional man undertakes, when he attempts to serve his clients or patients.

5. Members of the two committees disagreed also on the legal differences between certification legislation and licensing legislation. Certification laws define and limit the use of a title, whereas licensing laws restrict practice to a defined group. This issue is admittedly beyond the competence of the members of the two committees although it is an issue of concern to both groups.

6. The members of the two committees

agreed that local discussions and meetings were most the important of an effective local basis in psychiatry and psychology. Thus the two committees will suggest that the local branches of the American Psychiatric Association and the state associations of the American Psychological Association proceed to the establishment of interprofessional committees to provide a vehicle for local discussions and local consideration of the basic issues between the two professions.

7. It also seems imperative to members of both groups that some mechanism be established for the interexchange of ethical complaints in a more formal manner. Underlying some of the animosity between the two groups will often be formal matters of unethical or improper behavior. When rumors become serious issues, they must be treated as such. Therefore the two committees will undertake to work out a system of formal exchange of such complaints for study by the respective ethics structures of the two associations.

8. The committees discussed the importance of communication between the two central offices in Washington; it appears self-evident that this situation can and should be improved.

9. With regard to the chronic issues of private practice and psychotherapy, and the attribution of motivations, both groups argued about the relative weight of economic forces. The necessity for the opportunity to obtain clinical material from psychotherapy for research in the understanding of human behavior was recognized as legitimate by the psychiatrists, although, again, the question of a private-practice setting for this was debated. Certainly neither group could evaluate with precision the various motivations which operate in these areas of our interprofessional relations.

10. It was compellingly clear to the membership of the two committees that such meetings must continue; we are presenting here this narrative account of the May meeting to indicate to our parent groups that discussions have been re-opened, that some progress has been made in difficult areas, and that we propose to continue these conferences after a lapse in relationships of almost two years.

BOOK REVIEWS

DREAMS IN FOLKLORE. By Sigmund Freud and D. E. Oppenheim. (New York: International Universities Press, 1958, pp. 111. \$3.00.)

The manuscript of this book holds considerable historical interest. Oppenheim, a professor of Greek and Latin at the Akademisches Gymnasium in Vienna, had dedicated a portion of his studies in law and medicine to a collaboration in this present work. In 1911. Shortly after Freud left the manuscript with Oppenheim for lay comments, the latter dissociated himself from Freud and the Vienna Psychoanalytic Society. The manuscript, the existence of which was known, was traced to a daughter of Oppenheim living in Australia; it had survived travels from a concentration camp to another continent, and was eventually acquired for the Sigmund Freud Archives. It is the only original Freud manuscript written prior to 1914 which is preserved. The book presents the text both in German and English, contains photographs of the first manuscript page and of a letter from Freud to Oppenheim and a preface by Dr. Bernard L. Pacella, one of those whose efforts led to the acquisition of the text.

The contents of the monograph consist of brief items from German and Slav folklore, indicative of two main themes. The first 3 references are to penis symbolism in dreams, all interestingly prophetic of the psychological trend that Freud initiated in his interpretation of dreams. The second set of 11 references from the folklore deal with the general topic of the symbolism of feces in the dreams of the type of dream which deals with bodily feelings which occur when urinary or fecal tension or genital sensations tend to disturb sleep.

The stories of these simple folk who "interpreted" the symbolism in the dreams of their kinfolk, either directly or by allusion, gave Freud the opportunity to achieve a delightfully artistic work, the theme of which may seem common knowledge today, but which, nevertheless, will repay readers handsomely for the brief time that the reading takes.

NORMAN REIDER, M.D.,
San Francisco.

THE BRITISH ENCYCLOPAEDIA OF MEDICAL PRACTICE. Medical Progress, 1958. Editor in Chief, Lord Cohen of Birkenhead. (London: Butterworth & Co., 1958, pp. 352.)

Since the last war there has been sufficient time for the proper digestion of much of the

work done in the various fields of medicine, and the editors have been able to present a comprehensive survey of the progress of medicine in the various fields. The book is a valuable addition to the literature of medicine. It is a well-written, well-organized, and well-illustrated work. It is a book which will be of great value to the medical student and the medical practitioner alike. It is a book which will be of great value to the medical student and the medical practitioner alike.

The General Semantics of the future will be a book which will be of great value to the medical student and the medical practitioner alike. It is a book which will be of great value to the medical student and the medical practitioner alike. It is a book which will be of great value to the medical student and the medical practitioner alike. It is a book which will be of great value to the medical student and the medical practitioner alike. It is a book which will be of great value to the medical student and the medical practitioner alike.

In the variety of material, all the physiological complications of the various diseases and of biological conditions are discussed at length. The medical complications in disease of other organs, for example, make interesting and valuable reading. Progress in pathology, however, from the perspective of the new pathology with its new techniques.

With the introduction of such a part of so many drugs, Part III on Recent Developments in Pharmacology and Therapeutics is very ably done, as usual, by R. W. B. R. R.

With a medical literature so vast, these volumes of Medical Progress allow a good scanning of all the fields. This is the second year of Lord Cohen's editorship.

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THE GENERAL SEMANTICS OF WALL STREET. By John Magee. (Springfield, Mass.: John Magee, 1958, pp. 423. \$12.00.)

This book is an interesting application of Korzybski's system of general semantics to the motivations and evaluations that commonly influence those who invest in the stock market. The roots of erroneous functioning to which Korzybski attributed much of human maladaptation are amply and vividly illustrated by the author in many attitudes adopted toward Wall Street. Here, as elsewhere in human conduct, he demonstrates the inaccurate, and

sometimes disastrous, results that may arise from assuming that the map is a real equivalent of the territory, or from failing to distinguish between mere verbal constructs and the actualities of experience. Many of these points may to some readers seem little more than truisms when they are merely stated in general terms. Mr. Magee by applying them in his numerous concrete examples and relevant illustrations shows that they cannot be lightly dismissed.

The author's presentation of general semantics is lucid and readily understandable to those unfamiliar with the more elaborate and technical exposition of Korzybski's principles embodied in *Science and Sanity*. Before turning to the specific problems of the stock market Magee demonstrates the faulty conclusions that can arise from popular but unwarranted, and chiefly unconscious, assumptions that are, so to speak, built into our neural functioning, and which emerge unhappily in the result of our efforts to evaluate and deal adequately with our environment. In addition to its value for the ordinary reader seeking a realistic orientation in the relatively circumscribed but complex set of forces that determine the success or failure of financial investments, this volume can also be recommended as an interesting and sound introduction to the discipline of general semantics.

Since so much of psychiatric theory and psychiatric thought is today still at the conceptual level it should be particularly helpful and appropriate for psychiatrists to consider carefully the numerous and impressive illustrations in which the author shows how readily even learned and highly intelligent people can lose awareness that they are dealing with abstractions, and, lacking this pertinent insight, work their way logically to conclusions of excessive implausibility.

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PROGRESS IN CLINICAL PSYCHOLOGY. VOL. 3.
Edited by D. Brower and L. Abt. (New York: Grune and Stratton, 1958, pp. 249. \$7.75.)

The first 2 volumes of this series appeared in 1952 and 1956. The present volume contains 18 chapters arranged in 4 parts and written by 20 authors.

The introductory section reveals that clinical psychology is concerned with its professional status: "The clinical psychologist is viewed as a professional person with scientific training who brings the best available knowledge and the most skilled technique to bear in an attempt

to understand and to help individuals and groups of individuals in the conduct of their personal and interpersonal transactions." Yet, clinical psychology has not come of age scientifically or professionally. It tends to separate itself from experimentation, research and theory construction. Like much of psychology in general, it "is short on scientific and theoretical material." Clinical psychology, says one of the contributors, now faces a critical struggle with organized medicine, organized psychiatry, and organized psychoanalysis. This struggle began when clinical psychologists entered independent practice. Here we interrupt our paraphrasing mood to comment on a gross inaccuracy in the text. It is true that a moratorium on legislation for psychology was jointly recommended by parallel committees of the American Psychiatric and American Psychological Associations. Although this moratorium was accepted by the Council of the American Psychiatric Association, it was never accepted by the American Psychological Association. The APA cannot be accused therefore of independently denying the moratorium, as is done in this book. The Council of the American Psychiatric Association, rather, rescinded its approval of legal certification of psychologists because of mounting evidence that many psychologists were really interested in, and pushing for, licensure to establish themselves to practice on sick persons independently of medicine, and because the meaning of legal certification was being misinterpreted by the public as licensure and as broad competence to care for the sick.

Part two, the Psychodiagnostic Test Battery, reveals a wide variety of attitudes and practices. However, many of the authors lean heavily upon psychoanalytic formulations. Most are inclined to regard testing as one way of placing individuals in situations from which they attempt to extract information about psychodynamics, psychopathology, personality, and diagnosis and to make recommendations regarding psychotherapy. The psychological examination tends to be considered as an interpersonal transaction between client (patient) and psychologist. The tests are catalytic agents to facilitate the examiners' observations and inferences. Most of the authors take the position that the individual tests, especially projective tests, have low validity and low reliability. Thus a battery of tests is employed, and the assumption here is that somehow out of the battery a more meaningful description of personality may be obtained. Most frequently mentioned tests are the Rorschach,

the T.A.T., the M.M.P.I., one of the Wechsler scales, Sentence Completion, and the House-Tree-Person drawings. Some of the authors believe that they must also interview the patient, sometimes at considerable length, to give the tests much meaning. The tests, in short are not objective. The results depend more on the experience of the examiner. In different settings the use of the tests may vary. For example, in an institution, the psychologist after giving many tests "chews over his results *ad nauseam*" before writing a report. When the psychologist works as a consultant to a private psychiatrist, the test battery frequently undergoes a suspicious shrinkage. And, the psychologist in private independent practice finds himself "slipping the client a quick Bender and sending him home with a group M.M.P.I. to be filled out between sessions." A further difficulty is that an adequate useful personality theory to which the tests may be related does not exist. These chapters suggest that projective tests reveal the theoretical biases, the clinical experiences and the personality of the tester as much as they reveal the personality of the person tested. In projective techniques the examiner projects himself into the results.

The third section of the book, *Changing Conceptions in Psychotherapy*, discusses client centered counselling and psychotherapy. Freudian psychoanalytic progress, research and diagnosis in therapy, mysticism and psychoanalysis, group psychotherapy, play therapy, rehabilitation therapies, pharmacologic aids to psychotherapy, and newer approaches. The last section reviews clinical psychology in other lands, covering western and eastern Europe and the United Kingdom. There, generally speaking, much of what is called clinical psychology is closely tied to, or is in the hands of, psychiatry, and psychiatrists publish on mental testing and do much of the projective testing.

This book hangs together better than most which have so many contributors. It is informative, well written, and at points amusingly self-critical of clinical psychology. Worth reading for those who wish to keep abreast of current attitudes and practices in this field.

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together the principal writings of her teacher and friend Ruth Fulton Benedict. The volume contains Benedict's important journal articles, literary fragments, published and unpublished poetry, and some of her correspondence, particularly that with Franz Boas and Edward Sapir. Through her narrative and the presentation of Benedict's work, Mead treats the reader not only to the hidden side of a social scientist's career but also to the ideas and individuals which shaped the course of American anthropology.

Although Boas remains the dominant historical figure, it fell to Benedict as his intellectual successor in the Columbia University to pull together the elements of a growing "science of man." In this role, Benedict brought to anthropology her own unique background. An overly sensitive and shy woman, her academic interests began in literature with a concern for life's meaning. Her early writings reveal an intense introspection. Later she found in anthropology a vehicle whereby she could project this same search into the study of man. Although poetry remained of interest to her, it was in her prose that she so ably and beautifully presented her extremely humanistic point of view. *Patterns of Culture* remains her most imaginative and popular work.

As a transitional figure in American anthropology, Benedict carried forward the Boas tradition but added her own dimensions. While she continued to be concerned with culture she turned to the individual as well and inveighed against those determinists who neglected one or the other. This concern for the interrelationship of the individual to his culture culminated in her own "configurational" approach and also greatly influenced Mead and Sapir, who were at this same time developing their interests in the field of culture and personality.

This is a good book. Anyone interested in the social sciences, their development, and point of view will find this a valuable contribution. We are indebted to Mead for compiling and presenting the writings of this gifted woman in so lucid a style.

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THE BIRTH OF NORMAL BABIES. By Lyon P. Strean. (New York: Twayne Publishers, 1958, pp. 194. \$3.95.)

Dr. Strean has for many years been interested in the effects of all sorts of experiences undergone by the mother during pregnancy upon the development of the intrauterine or-

AN ANTHROPOLOGIST AT WORK. By Margaret Mead. (Boston: Houghton Mifflin Company, 1959, pp. 583. \$6.00.)

This biography by Margaret Mead brings

ation in the present book which is apparently written for a popular audience. The author recounts his own observations on a large variety of *ad hoc* cases—cases that have, for the most part, come fortuitously to his attention. It would be easy to dismiss Dr. Stearn's cases with the easy statement that they hardly constitute adequate scientific evidence. Almost all his evidence is based on single cases. But Dr. Stearn is well aware of the difficulty of a planned controlled study with human beings, and I quite agree with him that in the absence of such studies the evidence presented by the *ad hoc* case should not be hastily dismissed. Dr. Stearn has, indeed, gone further, and with Dr. Lyndon A. Peer has made a retrospective study on human mothers which strongly suggests that emotional disturbances during the first trimester of pregnancy are capable of producing developmental anomalies in the developing fetus usually of the cleft-palate hare-lip variety. Experimental studies by Stearn and Peer on mice yielded results which strongly tended to support their inferences in relation to emotional stress in the human mother during the first trimester of pregnancy.

Dr. Stearn's present effort will not serve to convince any scientifically trained mind of the validity of the case that he attempts to make out—but this should not prevent the qualified reader from paying serious attention to the implications of his evidence, namely, that there is a significant relationship between uterine environmental experience at definite critical developmental periods in the life of embryo and fetus—and development, not only physical but mental. Meanwhile Dr. Stearn's cautionary remarks to young people embarking upon the creation of a family will serve a useful purpose.

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AUSTRALIA'S ABORIGINES: THEIR LIFE AND CULTURE. By Frederick D. McCarthy. (Melbourne, Australia: Colorgrave Publications, 1957, pp. 200. \$13.00.)

This beautifully produced volume contains over 90 plates in color and numerous plates in black and white, together with a full text by a well-known authority on the Australian aborigines, Frederick D. McCarthy. There are 9 chapters dealing with various aspects of the life and culture of the Australian aborigines in a very readable and reliable manner. Undoubtedly this volume represents one of the most pleasant ways, and instructive, to get vicariously acquainted with an extremely inter-

esting people whose contribution to the understanding of the nature of human nature has been very considerable indeed.

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BIOLOGICAL PSYCHIATRY, VOL. I. Edited by Jules H. Masserman. (New York: Grune & Stratton, 1959, pp. 338. \$9.75.)

This first volume contains the papers presented to The Society of Biological Psychiatry, May 1958. Dr. Masserman's Presidential Address again stresses the basic role of motivation, adaptation, displacement and conflict. Study, diagnosis and treatment must be in terms of the uniqueness of the individual and the limits of the situation. Among other papers, evoked yawning in monkeys is reported. The sexual behavior of cats appears to be largely a matter of experience rather than instinct. A contribution of Dr. James Papez (probably his last) is a posthumous fragment with a suggestion that the caudate and putamen are dominant in toxic extrapyramidal efferent action by mobilizing cholinesterase.

Twenty-two of the 26 papers were neurochemical, as: studies of reserpine, ceruloplasmin and trifluoromazine with schizophrenia; iproniazid in melancholia; a research for alternatives to iproniazid; a comparative study of phenothiazine tranquilizers; L.S.D. and mescoline studies. The uses of drugs in treating depression, and in research and treatment generally, are reviewed. A conditioned reflex technique is suggested for use in psychiatric diagnosis and for measuring the effect of drugs.

Glutamic acid and glutamine appear to be involved in the chemical maturation of the brain. Increases of epinephrine and norepinephrine follow E.C.T. Water intake and output varies with the mood level. Other reports include diethazine effects during E.C.T.; studies of dimethylaminoethanol on evoked cortical activity and in clinical trial with normal and schizophrenic patients; the effects of crystallized adrenochrome; the influence of personality on the action of phenyltoloxamine and reserpine. Chapman and Wolff find a protease in the c.s.f. in subjects with sustained vascular head pain. This finding appears also in young adult patients with chronic schizophrenia.

The annual record of the transactions of this distinguished American group should be of regular interest to those who wish to keep themselves informed of the application of biological sciences to psychiatric problems.

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CRIME AND INRANITY. Edited by R. W. Nice.
(New York: Philosophical Library, Inc.,
1958, pp. 280. \$6.00.)

This compilation of 12 unrelated essays contains two of outstanding merit, both by lawyers: Simon E. Sobeloff, formerly Solicitor General of the U. S. and now Circuit Judge of the U. S. Court of Appeals in Baltimore, presents a lucid and authoritative exposition and critique of Anglo-Saxon concepts of criminal responsibility "From McNaghten to Durham and Beyond." This includes a trenchant criticism of the proposals by the American Law Institute. (The volume also includes a chapter by Herbert Wechsler, the principal proponent of the American Law Institute Code. Coherence and continuity would have been better effected had this chapter by Wechsler (XII) immediately preceded the one by Sobeloff (VIII).)

Another chapter of merit is that by Weihofen. Incidentally the views of both Sobeloff and Weihofen have been widely publicized to psychiatrists and there is virtually nothing new in these essays.

Davidson presents his views on irresistible impulse with journalistic effectiveness; they are unexceptionable. An original and provoking sociological consideration of criminality is presented by Cressey of the University of California.

The section authored by William F. Burke, Jr. identified as "Founder of The National Psychiatric Reform Institute in Albany, N. Y." contains some statements which are little short of astonishing. For example:

"Operations without permission should be outlawed, and patients suffering from syphilis should not be forced to submit to spinal taps, because such spinal taps often injure the patient, causing him to become a paresis case years before he would have if the disease were allowed to take its normal course."

"Honest doctors admit that while there have been a few permanent successes with shock therapy—there have also been untold numbers of tragic failures. The human brain is the center of the nervous system, the seat of consciousness and volition. It is for this reason

that the mind itself cannot be treated at all and should be permitted to suffer in order to submit to shock treatment. It is told us that shock therapy is a valuable and beneficial when administered to a cooperative patient."

"Often mental diagnosis is extremely difficult with the best qualified examining physician and certain psychiatrists disagree among themselves. Such disagreement is the rule rather than the exception. So the mental patient, too, has a perfect right to disagree with a doctor and since it is his own God-given brain, his the patient's will should prevail with regard to dangerous or experimental treatment."

"As I stated in 'Late Today' of June-July 1952: A new power is making itself felt in the world—the conscience of man shocked by mistreatment of the mentally afflicted."

This reviewer submits the following quotation from this same chapter with the admission that he is unable to make head or tail of it: "It is the claim of psychiatric reform that basic scientific and legal research, motivated by conscience, result in findings which support greater application of the legal concept to judicial aspects of practice in both civil and criminal cases." The latter part of this chapter proclaims the author's credo for psychiatric reform, opposes the establishment of a "psychoeracy," harkens back to Roger Williams and concludes that the author has given his life "to this glorious cause" and is "happy to not (e, omitted—one of many misprints) that it is resulting in momentous and colossal changes everywhere."

The inclusion of such a chapter raises some wonder about the editor's competence and authoritativeness. Unfortunately his qualifications and background are not spelled out. His introduction does appear to reflect considerable familiarity with the problem.

All in all this volume, despite its shortcomings and misprints, contains enough of merit to warrant its purchase by psychiatrists with a special interest in criminal behavior.

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IN MEMORIAM

OSKAR VOGT, M.D., 1870-1959

With the death of Professor Dr. Oskar Vogt on July 31, 1959, in his ninetieth year, another one of the eminent international figures in neurology and psychiatry of the first half of this century has passed.

Dr. Vogt was the former director of the Kaiser Wilhelm Institute for Brain Research in Berlin-Buch, now in the Russian zone. The scope of this institution was shown by its departmental organization. There was a department of anatomy, headed by Cécile Vogt; histology, directed by Max Bierschowsky; human physiology; experimental and electrophysiology; human genetics; animal genetics; chemistry and pharmacology; psychology; engineering and electronics; photography.

Oskar Vogt was born in Husum, Schleswig, the son of a Lutheran minister. His teachers in psychiatry were Otto Binswanger (Jena, 1893) and August Forel (Zürich-Burghölzli, 1894). Asked by Forel: "What do you want to study?" Vogt replied: "Hypnotism and brain anatomy." Myelinogenesis of the brain, which interested Vogt intensely, was in those days an important issue, and from Zürich he proceeded to Flechsig at Leipzig, who was the authority on this subject. The years of 1896-98 saw him in Paris, doing ward rounds and laboratory work at the Salpêtrière with Déjerine. Here he met Cécile Mugnier, who worked as an externe in the clinic of Pierre Marie at the Bicêtre. They were married in 1899. And with this begins the odyssey of this unique pair of savants.

At the beginning of the century, "the Vogts," as they soon became known in scientific circles, established a neurobiologic laboratory in Berlin, which after a few years was incorporated into the University of Berlin. Here was carried on the study of the structure of the brain, which at that time was in the hands of psychiatrists and neurologists. In 1902 the *Journal für Psychologie und Neurologie* was started under their editorship. For many years the financial support of the

neurobiologic laboratory came mainly from a strenuous private practice of neurology and the neuroses.

So great was the success of the Vogts that in 1931 the imposing Kaiser Wilhelm Institut für Hirnforschung was built for them in Buch, a suburb of Berlin. The institute was financed by contributions from the German Reich, the State of Prussia, the City of Berlin, the arms manufacturing Krupp family, and the Rockefeller Foundation.

Early in their career, the Vogts were occupied with the investigation of the myelinated fiber systems. This soon led to more intricate studies, culminating in what is known today as myeloarchitecture of the brain. They also analysed the relationship of the myelinated nerve fibers (myeloarchitecture), to the arrangement, number, size, and form of nerve cells within the laminae of the cortex (cytoarchitecture), with a view of subdividing the brain into regions of specific structure, i.e., into fields (architectonics). Much of the work on cytoarchitectonics was assigned to their co-worker Korbinian Brodmann (1868-1918), who during the period of 1901-10 was largely instrumental in establishing the science of cytoarchitectonics of the mammalian cortex. Some of this work has been criticized in recent years as not completely accurate. One should, however, not forget that such pioneering work can not be complete in the finest details, otherwise it would never see the light of publication.

Morphologic studies were only a part of the Vogts' research. Starting in 1903, physiologic mapping of the cerebral cortex in monkeys became routine with them. They mapped altogether about 25 functionally different fields, each of which was shown to have its characteristic cytoarchitectural structure. The importance of this work can only be appreciated, when one realizes that the functions of only six or seven regions of the cortex were known at



CECILE VOGT AND OSKAR VOGT

*From: Grosse Nervenärzte, Band II,
herausgegeben von Kurt Kolle,
Georg Thieme Verlag, Stuttgart, 1959.*

that time. These studies, in turn, laid the foundation for O. Foerster's (1919) mapping of the human cortex by means of electrical stimulation. The maps of O. Foerster and of Oskar Vogt differed only in small detail, and in these, Foerster conceded later that Vogt was correct. The field numbers employed by Foerster were those previously used by the Vogts.

Their names, especially Cecile's, have been permanently linked with diseases of the basal ganglia, to refer only to the work on *status marmoratus* (a marbled or mottled appearance) of the striatum in some cases of athetosis. Up to that time athetoid and choreiform movements were considered a hysteroid manifestation. The characteristics of the glial pattern (glia-architectonics) and the vascular pattern (angioarchitectonics) of the basal ganglia were first mentioned by them.

The Vogts' many observations appeared in monograph form or as regular publications, written either in the German or French language.

Oskar Vogt was also an expert in genetics, the new science which revolutionized since 1900 the entire field of biology. It was possibly due to Forel's interest in studying ants to determine race differences from the standpoint of behavior, that Oskar Vogt became an avid collector of bumblebees and beetles. In the quest of these insects the Vogts traveled to the Caucasus mountains, North Africa, Balearic Islands in the Mediterranean, and to the Balkans. The collection finally numbered approximately 400,000. One rare specimen cost them the equivalent of 100 U. S. Dollars. Many new species were discovered by the Vogts.

The interest in bumblebees and beetles had an entirely different objective from that of Forel's study of the life of ants. Vogt was interested in the laws underlying genetic mutations, and thus concentrated on the variations of the color bands in bumblebees and in the size, shape, and position of color spots on the wings of beetles. He contended that just as the body hair and color spots of these insects are subject to variation, so is the brain of man subject to structural variation, even so far as indi-

vidual language of a cortical area are concerned.

The combination of genetics, cerebral field mapping, and pharmacochimical experimentation, some of the latter done by their daughter Marthe, furnished the bulwark to the Vogts' theory of "pathoclisis," later applied to diseases of man. In this connection, they created the concept of "topistic units," which, in a sense, were physiochemical units, corresponding broadly to anatomical fields. Individual characteristics within topistic units were held responsible for their varying predisposition to succumb to a great variety of noxious agents and to genetic defects. For this differential topistic reactivity, Oskar Vogt coined in 1922 the term "pathoclisis." He designated, for instance, the striatum and the globus pallidus as two separate topistic units. Thus, the tendency of the globus pallidus to bear the brunt of the attack in carbon monoxide poisoning, or the selective damage of the substantia nigra in von Economo's encephalitis, was to them more readily explicable on this basis than on peculiarities of vascularization, as advocated by others.

Not being in sympathy with the doctrines of the Nazi party, Oskar Vogt resigned from the directorship of the Berlin institute. With private means and assisted by the wealthy Krupp family, the Vogts built their own brain research institute deep in the scenic Black Forest, on a sunny hillside above the town of Neustadt, in Southern Germany. Here they could and did work undisturbed. Cécile, liking sunshine and warmth, would have preferred to build the institute in Southern France, but existing foreign exchange restrictions prohibited this desire.

The brains for their studies came now from the not too distant University of Freiburg, where Ludwig Aschoff was professor of pathology, and from other universities. The Institute at Neustadt houses serial sections of over 500 brains. In this collection are also to be found the "élite" brains of many distinguished persons, including those of the pathologist Aschoff, the neuroanatomist A. Forel, the poet Sudermann, the linguistic genius Krebs, the psychiatrist Sommer, the Swedish neurolo-

gist S. E. Henschen, and others. They used this material for the study of the structural peculiarities in the brains of those who are specially gifted. The approach was both gross and cytoarchitectural. In a person, who spoke some 60 languages fluently (Krebs, who was attached to the embassy in Berlin), the temporal lobe was greatly overdeveloped. In a man of remarkable intellect, but who was so lacking in visual appreciation that he could hardly find his way home, a 50% reduction in the area striata was found. In a talented violinist (Ysaye of Belgium) there was a high degree of development of the transverse gyri of Heschl in the temporal lobe and of parts of the ventral lip of the Sylvian fissure. When one part of the brain was particularly well developed, other parts were in the realm of normal. Hence, universal genius was considered impossible. Studies of this sort, only in their incipency, could have great practical sociologic importance in the future. The many different cortical fields, delineated by the Vogts, were assumed to have an equivalent number of functions, and the interworking of these in myriad combinations—with each field subject to individual variation—was believed by them to account for the many variations in human behavior.

Oskar Vogt himself was endowed with an extraordinary memory, which remained with him until his death. This is a prerequisite for the research man, who is engaged in the study of the cytoarchitecture of the brain. It is essential to be able to retain the countless characteristic details of the cellular layers of the many cortical fields. Individual variability of cerebral architecture has barely been investigated in relation to mental abnormality. A more than average memory becomes particularly important, when one is dealing with possible subtle changes as observed, for example, in schizophrenia, the pathology of which was reinvestigated by the Vogts and their co-workers in the past two decades. They presented their work, full of minute details, and carried out with an endless patience and the greatest sincerity, at the International Congress of Neuropathology in 1952, where they introduced new points

into the discussion. They insisted that it is the persistence of diseased cells rather than the loss of nerve cells which causes the schizophrenic or any other mental symptomatology; and furthermore that certain regions of the brain are more involved than others. Extensive control material was used. Positive findings as these, coming from such a source, cannot be brushed aside lightly.

In more recent years, the aging of the brain was investigated, particularly the significance of the Nissl substance, and the life history of the nucleolus. It was Oskar Vogt's belief that mental activity retarded the aging of the nerve cells. He himself was the living example for this theory.

The Vogt Institute at Neustadt became the mecca for scientists from every corner of the world, some coming for brief research consultations only, and others staying longer for special studies. Those of us, who had the privilege of being guests of Cécile and Oskar Vogt will always cherish the stimulating hours, when after the evening meal, one withdrew into the huge drawing room, where conversation on almost any subject went on, often in several different languages.

Recognition and honors came from many lands. Oskar Vogt held 9 honorary doctorates, among them the Honorary D. Sc. by Oxford University. He was the recipient of the Erb (1926) and the Kraepelin gold medal (1928). When Lenin suffered a stroke, he was called as a consultant. On his death (1924), the Russian Government commissioned him to examine Lenin's brain, and to organize a Brain Research Institute in Moscow, which was staffed by some of his former Russian pupils. Several years ago he received the State Price of the Soviet-zone, and only recently was awarded the highest German Civilian Order in the field of science.

He is survived by his wife Cécile Vogt and two daughters, Marthe, an internationally known pharmacologist, and Marguerite, a geneticist, of Pasadena, California.

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GENETIC FACTORS IN SCHIZOPHRENIA

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Muller(27) has remarked that the heredity-environment controversy is an excellent example of wishful thinking by two sets of fanatical opponents, both of whom ought to know better. Neel and Schull(28) comment that the problem has often been approached with more bias than perspicacity, and that there is a tendency to overemphasize the material with which the observer is familiar. Continuing lack of certain knowledge concerning the etiology of most common forms of mental disorder is often compensated by strong emotional convictions and dogmatic assertions. It is the purpose of the present paper to examine critically certain hypotheses as to the role of genetic factors in the causation of schizophrenia.

It is well established that profound *differences* in human structure and function may result from either predominantly genetic endowment or environmental influences (particularly when the latter act during early stages in maturation). It is perhaps less generally recognized that very *similar* forms of abnormality may arise from different modes of inheritance, or from predominantly environmental experiences (either biological or psychosocial in nature). The significance of genetics in psychiatry is most clearly seen when rare hereditary traits are examined, such as Huntington's chorea or phenylketonuria, and the influence of heredity in the causation of the common mental illnesses is much more obscure(30). However, there is widespread agreement concerning the role of genetic factors in the determination of intelligence and mental deficiency (oligophrenia).

In spite of certain difficulties in definition and precise measurement, it is generally accepted that intelligence has a continuous

frequency distribution in the population that corresponds closely with the normal or Gaussian curve. This quantitative variation has heritable and non-heritable determinants, the former being attributed to polygenes that are considered responsible for some 50 to 75% of the total variability(3, 33). The bulk of high-grade mental deficiency (associated with an Intelligence Quotient greater than about 50, and largely unaccompanied by gross brain pathology), corresponds with the lower end of the normal frequency distribution of intelligence. The bulk of low-grade mental deficiency, on the other hand, consists of a variety of clinical entities, commonly associated with gross brain pathology, attributable in some instances to environmental agencies (e.g., anoxia, trauma or infection) and in others to major genes (e.g., simple recessive inheritance in amaurotic idiocy, phenylketonuria, true microcephaly and gargoylism).

The importance of genetic factors in the etiology of other degenerations of the central nervous system is well recognized(36). However, with the single exception of the organic psychosis associated with Huntington's chorea, which is transmitted by a single dominant gene (31, 32), the role of genetic factors in psychiatric disorders having their clinical onset during adult life is far less accurately established.

It has long been known that "functional" psychoses, psychoneuroses and other deviations of personality and behavior may be found in much higher frequencies among the relatives of affected individuals than in the population at large. Such intrafamilial concentration, however, has been variously attributed to three different types of causation:—(a) similar genetic predisposition, (b) direct non-genetic transmission of disease-producing agents or experiences, (c) the sharing of similar exposures in a pathogenic environment.

In order to examine genetic hypotheses of causation, two main approaches have

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² I am most grateful to Dr. William J. Schull, Associate Professor of Human Genetics at the University of Mich., for helpful criticism and suggestions.

been adopted, either separately or in conjunction: 1. The investigation of twins including at least one affected member, 2. The estimation of frequencies of abnormality in various classes of relatives. Much more extensive data of both kinds are available on schizophrenia than on any other form of "functional" psychiatric disorder, due probably to two special sets of circumstances: 1. A presumed high degree of ascertainment, such cases tending to manifest severe and persistent signs of abnormality, which have traditionally led to admission to mental institutions, 2. The relatively high frequency of this diagnosis among both admissions and total population of such institutions (approximately 50% of the latter, due to early onset and tendency to chronicity).

STUDIES ON TWINS

The genetic studies best known to psychiatrists in this country are probably those attempting to compare frequencies of schizophrenia in monozygotic and dizygotic cotwins of individuals diagnosed as schizophrenic. Theoretically, differences in the frequencies of concordance between the two types of twins might be expected to provide an accurate measurement of relative contributions of genetic and environmental factors, but there are a number of serious methodological difficulties which will be discussed below.

A rough index of the proportion of phenotype variance attributable to "heredity" is obtained from the following formula (28):—

$$H = \frac{CMZ - CDZ}{100 - CDZ} ,$$

where CMZ and CDZ are the percentages of concordant MZ and DZ twins respectively. The results of applying this formula to data recorded by 5 investigators and tabulated by Kallmann (1953) are shown in Table 1, from which we might be tempted to conclude that the contribution of genetic factors in the development of schizophrenia is slightly higher than in the determination of intelligence.

It should be emphasized, however, that the validity of these studies is open to the following serious doubts (28, 42).

1. *The diagnosis of schizophrenia* is not made by objective laboratory tests, but on the basis of clinical criteria that vary somewhat from one psychiatrist to another. Data recorded by Elkind and Doering and reproduced by Gruenberg (16) show a discrepancy of approximately 30% between diagnoses of schizophrenia (and other psychiatric disorders) made on the same individuals at Boston Psychopathic Hospital and various Massachusetts State Hospitals. It is to be hoped that there has been some improvement in uniformity of psychiatric diagnoses during the past 30 years, but Böök (2) suggests that some of Kallmann's recorded cases of schizophrenia would not have been diagnosed as such by European psychiatrists. Moreover, the problem of unconscious bias is introduced when the diagnosis of one twin is made with full knowledge of the status (and presumably diagnosis) of the twin partner. This is true whether diagnoses are made by the investigator at the time of entry of propositi into the study, or revised after some years of observation as in a number of Kallmann's cases.

2. *The diagnosis of zygosity.* Using modern serological techniques to investigate twins and other close relatives (preferably both parents and siblings), it is possible to arrive at accurate probability statements as to zygosity (28). It is not yet established how closely the results of traditional methods of zygosity determination correspond with those of the more sophisticated serological techniques. However, Walker and Reid (42) made the following comments regarding Slater's (38) scrupulously documented study of psychotic and neurotic illnesses in twins:

... The differentiation between uniovular and binovular twins was based, in part, on similarity or history of similarity, and, in part, on anthropometric measurements such as digital patterns, height, hair color, eye color, and skull measurements. Unless the report is examined critically, the reader may fail to notice the large proportion of instances where the diagnosis of zygosity was based only on the first criterion—sometimes on photographs or hearsay, both of which can be misleading. This is illustrated by the fact that of the true total of 61 uniovular twins there were 26 pairs for whom no fingerprints were available; these

TABLE 1
ESTIMATED CONCORDANCE RATES IN MONOZYGOTIC AND
DIZYGOTIC COTWINS OF
SCHIZOPHRENICS (a)

Investigator	Apparent Zygoty of Twins	Number of Pairs	Estimated Concordance Rate Percent	H CMZ CDZ 100 CDZ
Luxenburger, 1930	{ MZ DZ	21 60	66.6 } 3.3 }	0.655
Rosanoff, 1934	{ MZ DZ	41 101	67.0 } 10.0 }	0.633
Essen-Möller, 1941	{ MZ DZ	7 24	71.4 } 16.7 }	0.657
Slater, 1953	{ MZ DZ	41 115	76.3 } 14.4 }	0.723
Kallmann, 1953	{ MZ DZ	268 685	86.2 } 14.5 }	0.839

(a) Modified after Kallmann (1953), Table 14, Page 145.

are all designated "P Uniovular." In any case, to base a diagnosis of zygoty on the dermatoglyphics of fingerprints alone (disregarding palmar and plantar configurations) is open to question.

Walker and Reid also pointed out that in a number of instances the verdict of an objective criterion such as fingerprints was ignored, and they cite two specific cases (involving three *propositi*, all classified as uniovular and concordant for schizophrenia) in which they regarded zygoty as definitely misdiagnosed.

3. A further point raised by these reviewers concerned the *procedure of counting twin pairs twice wherever a pair contains two propositi*. This procedure has been used by both Slater and Kallmann and is considered appropriate, *provided* the abnormal individuals have been detected independently of one another (which may be difficult to judge in certain cases).

A number of potentially serious sources of bias in twin studies have been discussed in some detail by Neel and Schull (28), and may be grouped as follows:

4. *Unequal probabilities of ascertainment of the two classes of twins.*

5. *Biological biases with prenatal or*

natal onset (natal factors, lateral inversions, and the effects of mutual circulation).

6. *Biases of postnatal onset* (due to greater environmental similarities for MZ than DZ twins).

In view of all the preceding difficulties, it must be concluded that the results of twin studies hitherto conducted leave considerable doubt concerning the precise contribution of genetic factors in the etiology of schizophrenia. An attempt will now be made to examine the evidence derived from recorded frequencies of schizophrenia in the relatives of schizophrenics.

THEORETICAL AND RECORDED FREQUENCIES OF SCHIZOPHRENIA IN RELATIVES OF SCHIZOPHRENICS

By combining data obtained in the course of his own extensive longitudinal study with those recorded in 19 other European investigations, Fremming (11) estimated the lifelong expectation of schizophrenia in the general population as $0.80 \pm 0.08\%$, a figure which has found wide acceptance both in Europe and North America. (Rates in the two sexes did not differ significantly). On the basis of this estimate, the theoretical expectancy of schizophrenia may be

TABLE 2

THEORETICAL EXPECTANCIES OF SCHIZOPHRENIA, IF INHERITED THROUGH COMPLETELY DOMINANT OR RECESSIVE AUTOSOMAL GENES, AND FREQUENCIES RECORDED BY VARIOUS INVESTIGATORS

	Theoretical Expectancy if Inherited Through		Frequencies Recorded (Corrected for Age) with Standard Errors
	Completely Dominant Gene	Completely Recessive Gene	
General population			0.008 \pm 0.0008 (Fremming, 1951)
Children of first cousins	0.008	0.013	0.011 (quoted by Slater, 1958)
Relatives of schizophrenics (a)			
Parents	0.503	0.089	{ 0.093 \pm 0.008 (Kallmann, 1950) 0.041 \pm 0.011 (Slater, 1953)
Children (b)	0.503	0.089	0.164 \pm 0.013 (Kallmann, 1938)
Children of two schizophrenics	0.751	1.000	0.634 \pm 0.075 (Kallmann, 1938) 0.454 \pm 0.063 (Schulz, 1940) 0.392 \pm 0.130 (Elsasser, 1952)
Full siblings	0.503	0.297	{ 0.142 \pm 0.008 (Kallmann, 1950) 0.054 \pm 0.009 (Slater, 1953)
DZ cotwins	0.503	0.297	0.003 to 0.167
MZ cotwins	1.000	1.000	0.666 to 0.862
Half siblings	0.256	0.152	0.071 \pm 0.029 (Kallmann, 1950)
Nephews & nieces	0.252	0.047	0.039 (quoted by Kallmann, 1946)
First cousins	0.133	0.028	0.026 (quoted by Kallmann, 1946)

(a) Ascertained through affected individuals.

(b) Children of either one or two schizophrenics.

calculated for different classes of relative, under various hypothetical modes of genetic transmission (involving varying gene frequencies and rates of manifestation in homozygotes and/or heterozygotes).

Theoretical expectancies in relatives, under the alternative hypotheses of simple monohybrid autosomal dominance or recessivity (each with complete penetrance and expressivity) are shown in Table 2, together with the actual estimates recorded by various investigators. It is evident that the latter do not conform with the theoretical expectancies under either of these simple hypotheses, but they appear closer to the expectancies associated with the hypothesis of complete recessivity than to

those associated with complete dominance.

Under the hypothesis of simple recessivity, the theoretical expectation of schizophrenia in MZ cotwins, and in the children of two schizophrenics, is 100%, whereas recorded estimates (corrected for age) are considerably lower. Kallmann (19, 20, 21, 22) has long maintained that the potentiality for schizophrenia is inherited as a simple recessive unit characteristic with incomplete penetrance and expressivity, determined by "a genetically non-specific constitutional defense mechanism" (polygenic in nature). He cites as evidence the distribution of the trait in affected families, and also an excess of consanguineous marriages among the parents of schizophrenics

(approximately 5% of his American index cases being offspring of consanguineous matings).

Böök(2), however, points out that under this hypothesis the frequency in children should not be higher than in siblings, and the risk in siblings with one schizophrenic parent should be higher than in those with two normal parents (not found by Kallmann). He also argues that it would be necessary to assume an assortative mating of 94%, and that the high rate of consanguinity would not be expected for a genetic trait with a frequency as high as nearly 1%.

During the course of his own extensive and careful study of a North Swedish isolate, Böök recorded the following estimates of morbid risks: population 3%, parents 12%, siblings of propositi of two non-schizophrenic parents 9%, and siblings of propositi of one schizophrenic and one non-schizophrenic parent 12%. He examined three alternative monohybrid genetic hypotheses, involving 1. Recessivity with variable penetrance in the homozygote, 2. Partial dominance with equal variable penetrance in heterozygote and homozygote, 3. Partial dominance with variable penetrance in the heterozygote and 100% penetrance in the homozygote. From his analysis he concluded that "the type of schizophrenia prevalent in the investigation area was due primarily to a major simple dominant gene with a heterozygous penetrance of about 20% and a homozygous penetrance of about 100%. The frequency of the gene in the population was estimated at about 7%."

The present writer, however, considers that Böök's three formulae for morbid risks of schizophrenia in parents of schizophrenics are incorrect (and hence also the estimates of gene frequency he derived from them, and applied in computing morbid risks in siblings). In each instance the formulae he presented as "frequency of affected individuals among parents of schizophrenics" appear to be in fact the *a priori* expectancies of affected children from all matings capable of producing affected offspring. Observed frequencies in parents of schizophrenics are, however, obtained *a posteriori* through their affected offspring, and it therefore appears appropriate to

derive the relevant theoretical expectancies by means of Bayes' theorem. If this is done it may be shown that these *a posteriori* expectancies in the parents of affected individuals are in fact identical with the *a priori* expectancies in the children of these same affected persons. The following is a general statement of the relevant expectancies for the case of two alleles A and a having frequencies p and q ($= 1-p$) respectively:—

The probabilities (expectancies) of the various genotypes in parents and children of an AA individual are p (AA) : q (Aa) : 0 (aa), the probabilities in parents and children of an Aa individual are $\frac{1}{2}$ p (AA) : $\frac{1}{2}$ q (Aa) : $\frac{1}{2}$ q (aa), and the probabilities in parents and children of an aa individual are 0 (AA) : p (Aa) : q (aa). It may also be shown that phenotypic expectancies are the same in parents and children of given individuals, regardless of considerations of dominance and penetrance.

It is now proposed to examine briefly certain expected frequencies of schizophrenia in relatives of schizophrenics, under three hypotheses involving variable rates of manifestation in heterozygote and/or homozygote. For this purpose, the existence of a Hardy-Weinberg equilibrium is assumed (but will be discussed subsequently). In each situation the normal gene has been designated as A, occurring with frequency p in the population, and the gene assumed responsible for schizophrenia as a, with frequency q ($= 1-p$). The rate of manifestation (under the conditions specified for each hypothesis) has been recorded as m, each numerical value of which is associated with a single numerical value for q. The frequency of schizophrenia in the population ($= s$) is assumed throughout to be 0.008.

Hypothesis A. Simple recessivity with incomplete manifestation (m) in homozygote. (Table 3, Figure 1)

Three of the 4 phenotypes will be normal (AA, Aa, aa_o) and the remaining one schizophrenic (aa_m). Phenotypic frequencies in the population will be p² (AA) : 2pq (Aa) : (1-m)q² (aa_o) : mq² (aa_m).

Formulae for the theoretical expectancies of schizophrenia in relatives of schizophrenics are listed in Table 3, and those

for parents, children and siblings are depicted graphically in Figure 1 (according to gene frequency and rate of manifestation). It may be noted that expectancies for siblings are higher than those for parents and children (of one or two schizophrenics) for all values of m and q , the latter being contrary to recorded findings (Table 2).

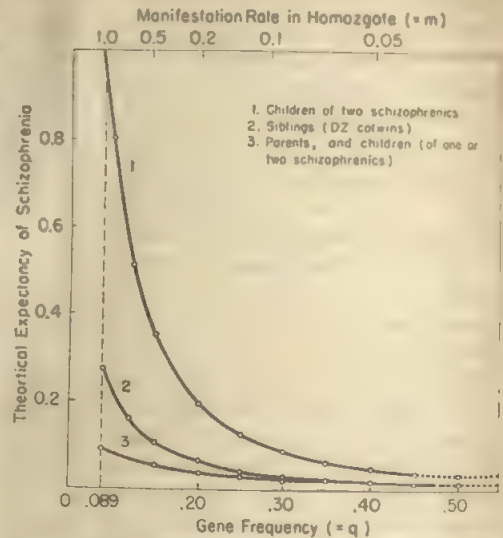
Hypothesis B. Partial dominance with complete manifestation in homozygote but incomplete manifestation (m) in heterozygote. (Table 4, Figure 2).

Two of the 4 phenotypes will be normal (AA, Aa_0) and the other two schizophrenic (Aa_m, aa). Phenotypic frequencies in the population will be p^2 (AA) : $(1-m)2pq$ (Aa_0) : $2mpq$ (Aa_m) : q^2 (aa).

This was the third hypothesis examined by Bök in generating theoretical expectancies for different classes of siblings, and the one with which he considered his data corresponded most closely. However, attention may be drawn to what appears to be a minor error in Table 39 on page 89 of his

FIG. 1

Theoretical Expectancies of Schizophrenia under Hypothesis A



article. It is suggested that the expected frequency of affected children from his fifth type of mating ($DR_m \times DR_m$) should be $d^2r^2p^2 + 2d^2r^2p^3$ (the final exponent

TABLE 3

THEORETICAL EXPECTANCIES OF SCHIZOPHRENIA UNDER HYPOTHESIS A :
MONOHYBRID AUTOSOMAL RECESSIVITY, WITH INCOMPLETE MANIFESTATION
IN HOMOZYGOUS INDIVIDUALS

Category	Theoretical Expectancy of Schizophrenia ^(a)
General population	$mq^2 = s \approx 0.008$
Children of first cousins	$\frac{1}{16}(mq + 15s)$
Relatives of schizophrenics ^(b)	
{ Parents, and Children ^(c)	{ mq m
Children of two schizophrenics	
{ Full siblings, and DZ cotwins	{ $\frac{m}{(2-q)^2} - E$
MZ cotwins	Not less than m
Half siblings	$\frac{1}{2}(E + s)$
First cousins	$\frac{1}{8}(mq + 3s)$

^(a)Where s is the frequency of schizophrenia in the general population (≈ 0.008), q is the frequency of the gene assumed responsible for schizophrenia, and m is the manifestation rate of schizophrenia in persons homozygous for this gene.

^(b)Ascertained through affected individuals.

^(c)Children of either one or two schizophrenics.

being 3 instead of 2). When this correction is made, the total affected children from all matings reduces to the anticipated value of $d^2 + 2dp(1-d)$, which is simply the expectancy of schizophrenia in the general population (according to Bök's notation).

Although formulae obtained by this method are equivalent to those derived by Slater (38) under the same hypothesis, the latter author used a simplified approach on which Table 4 and Figure 2 have been based. In these theoretical expectancies, h is the proportion of schizophrenics who would be homozygous, given a certain manifestation rate and associated gene frequency. In the symbols of the present study $h = q^2 / (q^2 + 2mpq) = q^2 / s = q^2 / 0.008$.

Slater cited several recorded frequencies in children and siblings of schizophrenics, that roughly corresponded with theoretical expectancies (under this hypothesis) asso-

FIG. 2

Theoretical Expectancies of Schizophrenia under Hypothesis B (modified after Slater, 1958)

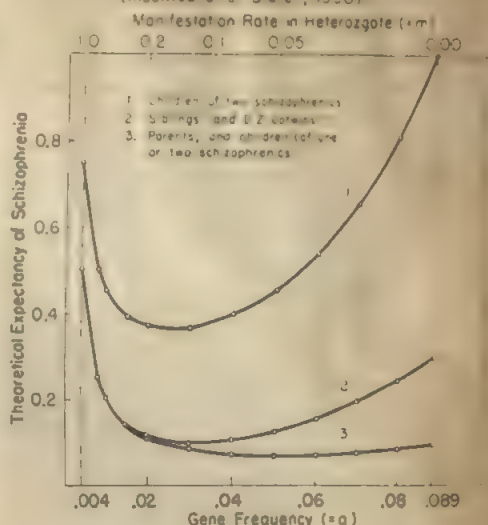


TABLE 4

THEORETICAL EXPECTANCIES OF SCHIZOPHRENIA UNDER HYPOTHESIS B:
MONOHYBRID AUTOSOMAL DOMINANCE WITH COMPLETE
HOMOZYGOUS MANIFESTATION, BUT INCOMPLETE MANIFESTATION
IN HETEROZYGOUS PERSONS

Category	Theoretical Expectancy of Schizophrenia ^(a, b)
General population	$q^2 + 2mq(1-q) = s \approx 0.008$
Children of first cousins	$\frac{1}{16}(q+15s)$
Relatives of schizophrenics ^(c)	
{ Parents, and Children ^(d)	$\frac{1}{8}(1+h)(m+q) - hmq$
Children of two schizophrenics	$\frac{1}{8}(1+h) \{ 2m(1-h) + 1 + h \}$
{ Full siblings, and 1/2 cotwins	$\frac{1}{8} \{ 2m + h + q(2m + h + 1 - 2mh) + q^2(1 - 2m) \} - E$
MZ cotwins	Not less than $h + m(1-h)$
Half siblings	$\frac{1}{8}(E + s)$
First cousins	$\frac{1}{8} \{ (1+h)(m+q) + (7-h)(s + mq^2) \}$

^(a) Where s is the frequency of schizophrenia in the general population (≈ 0.008), q is the frequency of the gene assumed responsible for schizophrenia, m is the manifestation rate of schizophrenia in persons heterozygous for this gene and h is the proportion of schizophrenics who are homozygous ($= q^2/s$).

^(b) The first five formulae correspond with those derived by Slater (1958) under this hypothesis.

^(c) Ascertained through affected individuals.

^(d) Children of either one or two schizophrenics.

ciated with a heterozygous manifestation rate of about 0.26 and a gene frequency of about 0.015. However, he found it necessary to ignore recorded frequencies in parents on the grounds that they are "a group of persons who have been selected for survival and for health"—as indeed are all *propositi* and relatives who have lived long enough to develop a schizophrenic psychosis. It may also be of interest to note that under these conditions of manifestation and gene frequency, only 3% of schizophrenics would be homozygous, and over 70% of those having the gene assumed responsible for schizophrenia would fail to manifest the disease—which might be attributable to the influence of other modifying genes or to environmental factors or both.

Hypothesis C. Partial dominance with ho-

FIG. 3

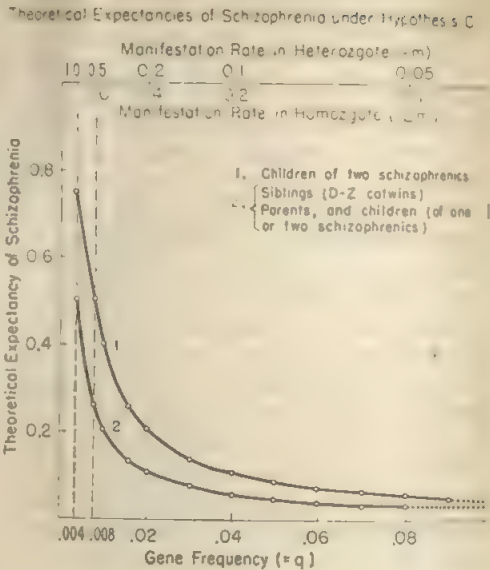


TABLE 5

THEORETICAL EXPECTANCIES OF SCHIZOPHRENIA UNDER HYPOTHESIS C: MONOHYBRID AUTOSOMAL PARTIAL DOMINANCE, WITH MANIFESTATION RATE IN HOMOZYGOTES DOUBLE THAT IN HETEROZYGOUS INDIVIDUALS

Category	Theoretical Expectancy of Schizophrenia ^(a)
General population	$2mq = s \approx 0.008$
Children of first cousins	s
Relatives of schizophrenics ^(b)	
} Parents, and Children ^(c)	$\frac{1}{2}m(1 + 3q)$
Children of two schizophrenics	$m(1 + q)$
} Full siblings, and DZ cotwins	$\frac{m(1 + q^3) + s(2 - q)}{2 + q(1 - q)} = E$
MZ cotwins	Not less than $m(1 + q)$
Half siblings	$\frac{1}{2}(E + s)$
First cousins	$\frac{1}{2}m(1 + 17q + 7q^2 - q^3)$

^(a) Where s is the frequency of schizophrenia in the general population (≈ 0.008), q is the frequency of the gene assumed responsible for schizophrenia, $m(\leq 0.5)$ is the manifestation rate of schizophrenia in persons heterozygous for this gene, and $2m(\leq 1.0)$ is the manifestation rate in homozygous individuals.

^(b) Ascertained through affected individuals.

^(c) Children of either one or two schizophrenics.

mozygous manifestation rate ($2m \leq 1.0$) double that of heterozygous rate of manifestation ($m \leq 0.5$). (Table 5, Figure 3.)

The second of Bök's three hypotheses concerned the assumption of equal penetrance in both homozygote and heterozygote. This possibility appears much less likely than that of the assumptions just considered under hypothesis B. However, another plausible hypothesis would appear to be that of penetrance (and/or expressivity) proportional to the number of pathological genes present, and this situation will now be examined.

Five phenotypes must be considered, three of which will be normal (AA , Aa_o , aa_o) and two schizophrenic (Aa_m , aa_m). The phenotypic frequencies in the population (for $m \leq 0.5$) will be p^2 (AA) : $(1-m)2pq$ (Aa_o) : $2mpq$ (Aa_m) : $1-2m$ q^2 (aa_o) : $2mq^2$ (aa_m).

The proportion of schizophrenics that are homozygous will in this case be equal to the gene frequency (q), and it is quite convenient to derive theoretical expectancies by means of Bök's method of exhaustive enumeration. The types of mating (from which affected offspring arise) are in fact identical with those listed in table 38 on page 88 of his article, but the expected frequencies of most matings and affected children are somewhat different.

Theoretical expectancies in relatives are recorded in Table 5, and those for parents, children and siblings depicted graphically in Figure 3. In this instance, the expectancies in siblings are not appreciably different from those in parents or children for all rates of manifestation (as is the case under hypothesis B for relatively high rates of manifestation and low gene frequencies). However, the lower expectancies in the children of two schizophrenic parents under hypothesis C result in a poorer fit with observed frequencies than that obtained under hypothesis B and discussed above.

**CONSANGUINITY, HARDY-WEINBERG
EQUILIBRIUM, ASSORTATIVE MATING,
MORTALITY, FERTILITY AND MUTATION**

It was mentioned previously that Kallmann has cited a high rate (5%) of consanguinity (unspecified) between parents of schizophrenics in support of his hypo-

thesis of recessivity—and that Bök has pointed out this would not be expected in a genetic trait with a frequency of nearly one percent. Assuming the minimum gene frequency (under the hypothesis of recessivity) to be 0.089, the application of Lenz's formula (18) indicates that in fact the expected frequency of first-cousin marriage would be no higher than that in the general population (which is about 1%). Slater (38) has also found the expectation of schizophrenia in the children of first cousins an insensitive measure of dominance-recessivity under hypothesis B (and this expectation is the same as that in the general population under hypothesis C.).

The theoretical expectancies presented in the previous section are all based on the assumption that the conditions for the Hardy-Weinberg equilibrium are satisfied, these conditions being as follows (28) :

1. No tendency for like genotypes to mate (*i.e.*, random mating), and all matings equally fertile.
2. The absence of selection for or against any of the genotypes involved.
3. Stability of the gene (*i.e.*, no mutation).
4. Non-overlapping generations.
5. An infinitely large population.

However, there is evidence suggesting that the first 3 of these criteria are violated in the case of schizophrenia. Thus, it has been established that people tend to select mates of similar intelligence, and there is reason to suspect assortative mating in persons predisposed to certain forms of mental disorder, including schizophrenia (15, 29).

Moreover, schizophrenics are subject to strong negative selection on account of both high mortality and low fertility. The mortality some years ago was estimated as from two to three times that of the corresponding general population (1, 9, 26). Data from several further investigations indicate that the reproductive fitness of schizophrenics is not greater than 0.70 (2, 4, 5, 9), due mainly to selection against marriage of schizophrenic males, but also in at least one study to diminished fertility of married schizophrenic females.

In view of the evident selection against schizophrenia, there are three possible

explanations of its apparently undiminished prevalence (24).

1. It is not, or some varieties of it are not, hereditary.

2. Outwardly healthy carriers of pathological genes might reproduce at a higher rate than normal—a possibility that seems to have been excluded by studies on the fertility of siblings of schizophrenics (9, 19).

3. The pool of pathological genes might be constantly augmented by means of *mutation*. Böök estimated the mutation rate in his North Swedish isolate as 5×10^{-3} (or 1 in 200) genes per generation. Estimates of a similar high order of magnitude have been considered generally applicable by other authorities (33), and would be required by the monohybrid hypotheses examined earlier.

ALTERNATIVE HYPOTHESES

Several leading geneticists have remarked on the impossibility of forcing the data on schizophrenia into a simple Mendelian pattern of inheritance (30, 37). The present writer is now convinced that, even when modified by various degrees of penetrance and expressivity, no monogenic hypothesis is compatible with all the data recorded.

Three alternative hypotheses (that are not mutually exclusive) may be considered briefly:

1. *That schizophrenia is predominantly determined by environmental influences.* There is much more theory than fact relating to this proposition, but a number of studies have been made of such objective data as parental ages, permanent loss of parents, family size, birth order, ordinal position and sex of siblings (12, 13, 14).

2. *That the genetic component of the schizophrenic syndrome is heterogeneous,* and includes two or more types, each transmitted by different genetic mechanisms (37). In view of the difficulties in the genetic analysis of schizophrenia, detailed evidence in support of this hypothesis is lacking at the present time, but some interesting data have recently been presented (43).

3. *That at least part of the genetic component of schizophrenia is polygenic in nature.* In this connection, several asso-

ciations appear to exist between schizophrenia and presumed polygenic systems—such as genetic determinants of intelligence, resistance to bodily disease, and somatotype.

It is recognized that individual patients with schizophrenia may have very superior *intelligence*, and also that the disease itself is apt to be accompanied by marked deterioration in intellectual function. However, Terman (40) has shown an association between high childhood intelligence and low adult rates of mental illness (and also mortality). Dewan (6) has demonstrated an association between intellectual performance at induction, and subsequent psychiatric discharge from the Canadian army. Larsson and Sjögren (23) have reported an unduly high frequency of concurrent oligophrenia and schizophrenia, and discussed the possibility of a genetic connection between these disorders.

Since intelligence is also related to *socio-economic status* (40), such a connection between schizophrenia and intelligence would be quite compatible with studies indicating the frequency of schizophrenia to be inversely related to social class (17). The *increased mortality of mothers* during the early childhood of schizophrenics may also be associated with the latter relationship to social class (13, 14).

Attention has already been drawn to the relatively high *mortality* recorded in patients with schizophrenia. This may be at least partly related to *impaired resistance* to tuberculosis (22) and *deficient immune responses* to other infections (7, 41). Evidence of some association with *somatotype* is extensive, but controversial (22).

In discussing *the testing of complex data for agreement with a simple genetic hypothesis*, Neel and Schull point out that there are diseases with a hereditary element in whose study one may encounter several simultaneous statistical problems, such as incomplete penetrance, a variable age of onset, and an uncertain degree of ascertainment (and at the same time also genetic heterogeneity). They conclude that there are times when the proper genetic analysis of a given disease must await certain medical advances, and that the student of human genetics should become familiar

with the limitations of his approach and the data with which he works.

Penrose(30) has enumerated the principles of investigation to be applied to the particular problem of the genetics of mental disorder, and has rightly concluded that until these things are done on a large scale most of our theories about inheritance of psychoses will remain in the realm of speculation.

SUMMARY

It is generally accepted that intelligence in the general population, and high-grade mental deficiency, are largely determined by the cumulative effects of polygenes. Simple Mendelian inheritance is well established as causative of certain forms of (usually) low-grade mental deficiency, and other degenerations involving the central nervous system, including Huntington's chorea.

There is still considerable doubt concerning the significance of genetic factors in the etiology of "functional" psychiatric disorders. Schizophrenia has been extensively studied by means of twin and family data, but the extent and nature of possible genetic factors in this syndrome remain uncertain.

Twin studies suggest that heredity may be slightly more important in predisposing to schizophrenia than in determining intelligence, but these studies are complicated by very serious methodological difficulties, some of which have been discussed.

The frequency of schizophrenia is significantly greater in families of schizophrenics than in the general population, but observed frequencies in different classes of relatives do not conform with those expected on the basis of simple Mendelian dominance or recessivity.

Expected frequencies in various classes of relatives have been examined under each of three hypotheses involving incomplete penetrance and/or expressivity (in homozygote and/or heterozygote). Data on consanguinity, assortative mating, mortality and fertility have been outlined.

It has been concluded that no monogenic hypothesis is compatible with all the data recorded, and three alternatives (that are not mutually exclusive) have been briefly

considered: 1. Predominantly environmental causation, 2. Genetic heterogeneity, 3. Polygenic inheritance.

Statistical associations between schizophrenia and limited intelligence, inferior socio-economic status, maternal mortality, and immunological or other somatic characteristics of schizophrenics, are all compatible with the latter hypotheses.

The data recorded on schizophrenia are complex and do not conform with any simple genetic hypothesis. Pending the results of considerable further investigation, theories concerning the role of possible genetic factors in the development of schizophrenia and other "functional" psychiatric disorders will remain in the realm of speculation.

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EVALUATION OF TRANQUILIZING DRUGS IN THE MANAGEMENT OF ACUTE MENTAL DISTURBANCE¹

D. WILFRED ABSE, M.D., W. G. DAHLSTROM, Ph.D.
AND A. G. TOLLEY, M.D.²

In 1956, a preliminary report of the present research project³ was published(1) based on a small group of 36 subjects studied over the period of a week. Each patient in the study was felt to be in need of day-time sedation because of excessive tension, anxiety or emotional disturbance causing severe personal discomfort or difficulties in ward management while hospitalized for short-term intensive psychiatric treatment. Each was assigned to one treatment (reserpine, powdered opium, or placebo) on a random basis and given a fixed dosage without the patient or staff knowing the drug being administered. All medication was dispensed in equal numbers of identical capsules such that patients received 2 capsules 4 times daily for the first 2 days and then 1 capsule q.i.d. for the remainder of the medication period. This provided a total daily dose of reserpine of 8 mg. for the first 2 days, then 4 mg. daily and for powdered opium 400 mg. the first 2 days, then 200 mg. daily. Lactose was dispensed in equal numbers of capsules. Data from daily nursing checklists, psychiatric ratings and checklists and psychological testing were reported, most of which suggested that the patients were all im-

proving during the period of observation without any one treatment showing any clear advantage over the others. That is, for this group of acutely disturbed patients, reserpine did not appear to show any special benefit not obtained by standard ward care and the semblance of medication. Several questions were obviously left open in the previous report: the dosage chosen may well have been on the average too low to be physiologically effective for this kind of patient; the period of time may not have been sufficient to allow the tranquilizer to reach optimal effectiveness: reserpine may be inferior to other tranquilizing agents for the management of these disorders. The present report offers additional evidence on each of these questions.

Since the initial report, a total of 68 patients have been studied in the reserpine series and a second series involving 30 patients added to the project comparing chlorpromazine with the standard drug (powdered opium) and the inert placebo (lactose). The dosage level for chlorpromazine was set at 600 mg. for the first 2 days and then 300 mg. daily. In addition it has been possible to study some of the cases over a longer interval than a week. The same evaluative procedures, cautions for patient safety and secrecy concerning the drug used, and objectivity in assessing the changes noted have been adhered to in these subsequent procedures.

¹ Read at the 115th annual meeting of the American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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³ This study was carried out under U.S.P.H. Grant Number MY-1870

TABLE 1

MEAN BLOOD PRESSURE READINGS BEFORE AND AT TWO DAY INTERVALS AFTER MEDICATION. (SIX CASES IN EACH GROUP.)

Time	CHLORPROMAZINE		RESERPINE		POWDERED OPIUM		PLACEBO	
	Syst.	Diastol.	Syst.	Diastol.	Syst.	Diastol.	Syst.	Diastol.
Initial	132.7	85.3	139.8	88.8	118.0	72.7	140.3	88.0
3rd day	118.7	75.3	120.7	77.3	113.3	70.0	134.0	83.3
5th day	116.7	75.3	112.0	69.3	118.3	71.2	130.0	78.0
7th day	110.7	69.3	116.0	72.7	113.3	70.0	118.7	75.3

PHYSIOLOGICAL MEASURES

In Table 1 and Figure 1 are provided the mean values of blood pressure recording made initially and on alternate days during the first week of medication. Analyses of variance of the systolic and diastolic pressure values over this interval indicates that, for both indices, the time changes were larger than chance, and that the diastolic readings showed an interaction with the drug being administered. The

reserpine group showed the most rapid drop in mean blood pressure.

PSYCHOMOTOR PERFORMANCE

Support for some systemic effect of the tranquilizing drug at the chosen level also comes from the performance of the reserpine group on the Purdue Pegboard. It was previously noted that this group failed to show the expected increase in proficiency over a week's interval on the assembling sub-test in which several small pieces must be put together in a prescribed order. The

TABLE 2

MEAN NUMBER OF PIECES PLACED OR ASSEMBLED ON THE PURDUE PEGBOARD BY CASES IN THE RESERPINE AND PLACEBO GROUPS PRIOR TO MEDICATION AND AFTER A MONTH'S TREATMENT. (FIVE CASES IN EACH GROUP.)

Time	RESERPINE		PLACEBO	
	RLB	Assembly	RLB	Assembly
Initial	133.8	17.8	168.0	21.1
1st Week	180.6	19.0	182.4	25.8
4th Week	180.6	17.7	175.2	27.2

FIG. 1

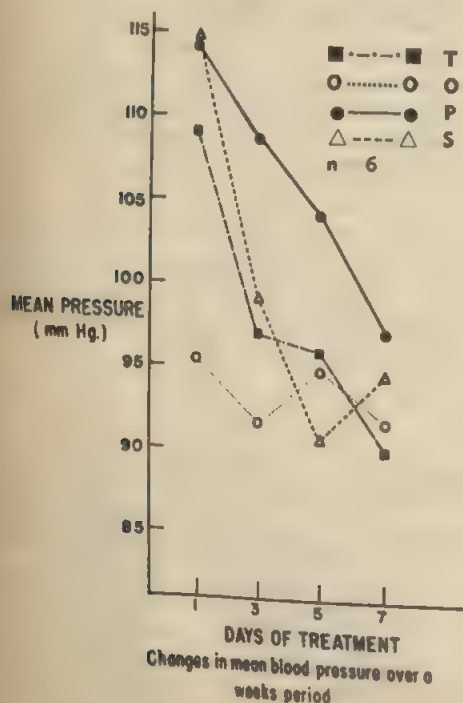


FIG. 2

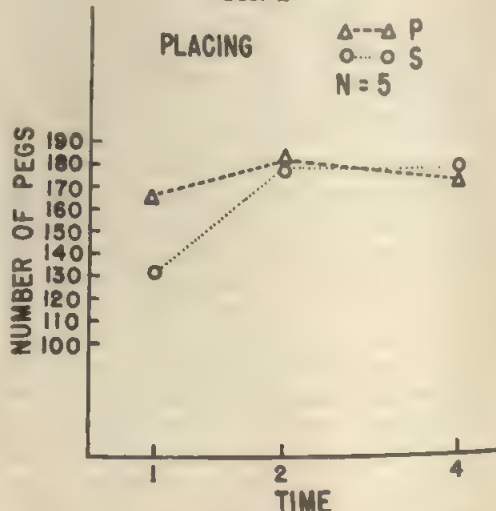
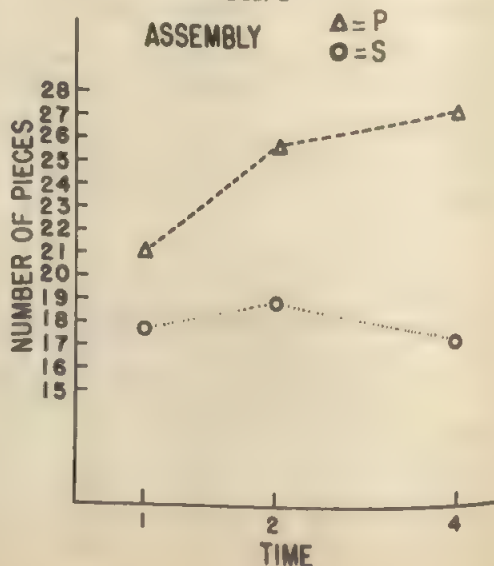


FIG. 3



reserpine group shows normal performance on a simple placing test based on the right hand, left hand, and two handed performance combined (RLB) but fails to improve on the assembly task even over the period of a month's time (Table 2, Figures 2 and 3).

TABLE 3

MEAN NUMBER OF ADVERSE BEHAVIORAL ITEMS NOTED BY THE NURSING STAFF ON A STANDARD CHECKLIST FOR EACH OF THE TREATMENT GROUPS DURING THREE WEEKS OF MEDICATION, (SEVEN CASES IN EACH GROUP.)

<i>Interval (days)</i>	<i>Chlorpromazine</i>	<i>Reserpine</i>	<i>Powdered Opium</i>	<i>Placebo</i>
1-3	72.4	63.1	82.4	71.4
4-6	68.6	50.2	75.1	64.9
7-9	44.6	33.9	47.4	54.9
10-12	33.9	26.4	30.7	50.0
13-15	30.4	27.3	30.0	45.6
16-18	28.9	24.4	23.3	27.9
19-21	25.6	28.7	21.6	45.7

TABLE 4

MEAN NUMBER OF ANXIETY ITEMS CHECKED BY THE PSYCHIATRIC RESIDENT FOR EACH TREATMENT GROUP INITIALLY AND AFTER A WEEK OF MEDICATION

<i>Time</i>	<i>Reserpine</i>	<i>Powdered Opium</i>	<i>Placebo</i>
Initial	7.0	8.2	6.0
1st Week	4.3	5.7	3.5

STAFF RATINGS

Over a week's time the observations of the nursing staff as recorded on a checklist (Figure 4) that they completed 3 times a day were previously found to show consistent improvement for all groups but no special interaction with the specific medication was found. There was some suggestion that the drug condition was beginning to show some advantage at the end of this period, however, warranting continued observation. Table 3 and Figure 5 show comparable findings for a 3-week period of observation. Again it can be seen that the groups all show a consistent and gratifying decrease in psychiatrically adverse behavior but no one group shows any special change either in magnitude or rate of change. The same general findings were obtained on the mental status and anxiety ratings made by the psychiatric staff in charge of these cases. Figure 6 shows the anxiety rating sheet used by the psychiatric residents. Table 4 and Figure 7 summarize the number of items rated prior to and after a week of treatment. No drug effect was found to be significant.

PERSONALITY TEST FINDINGS

The difficulties in administering the personality test at the start of the treatment to the more disturbed cases assigned to the project have made it necessary to limit the report to a small group of cases given reserpine and a corresponding group given the inert placebo. Table 5 shows the mean scores on each of the scales in the basic MMPI profile and the ego strength scale devised by Barron(2). Contrary to a number of studies on the changes on the MMPI

TABLE 5

MEAN SCORES ON THE MMPI FOR RESERPINE AND PLACEBO GROUPS PRIOR TO MEDICATION AND AFTER ONE WEEK OF TREATMENT. (10 CASES EACH GROUP.)

<i>Group</i>	<i>Scales</i>													
<i>Reserpine :</i>	<i>L</i>	<i>F</i>	<i>K</i>	<i>Hc</i>	<i>D</i>	<i>Hy</i>	<i>Pa</i>	<i>Mf</i>	<i>Pa</i>	<i>Pr</i>	<i>Sc</i>	<i>Ma</i>	<i>Si</i>	<i>Es</i>
Initial	54	63	54	67	78	73	69	49	67	71	73	56	59	26
1 week	57	74	50	69	73	71	73	55	80	73	80	62	59	38
<i>Placebo :</i>														
Initial	56	59	54	65	76	67	59	55	61	68	66	55	55	17
1 week	54	62	56	65	76	71	62	55	64	71	69	54	59	19

interesting is reported by Windle. In the cases in this study show a rise in pathological scores rather than the expected decline. The reserpine group showed the largest absolute shifts but the differences achieved statistical stability only for the hysteria and paranoia scales. The ego strength scale showed changes in the direction of greater

readiness for psychotherapy for both groups, the reserpine group showing a statistically reliable advantage over the placebo group. These findings seem to show that there is a shift from regressive disintegration towards a restitutional effort characterized by externalization and by defenses of a more synthetic order.

FIG. 4

Project No. _____

Patient _____

NURSE _____

Date _____ Shift _____

A NEW CHECKLIST OF BEHAVIORAL OBSERVATIONS BY PSYCHIATRIC NURSES

Complete this form on each patient in the study for each shift. Place a (•) opposite each item characteristic of the patient during the period of observation. Place a (++) opposite each item which is present in extreme degree. Note in the routine nursing notes in the chart specific instances of the behavior checked in this list.

BEHAVIOR AND MANNERISMS:

- _____ posturing
- _____ bodily rigidity
- _____ talkative and voluble
- _____ perspiring excessively
- _____ grimacing
- _____ incoherent in conversation
- _____ hallucinating or appears to be
- _____ talking to himself
- _____ bewildered and perplexed
- _____ restless and fidgeting
- _____ tremors
- _____ mute
- _____ circumstantial in conversation
- _____ tics
- _____ masturbating
- _____ untidy
- _____ picking and rubbing body parts
- _____ incontinent
- _____ pacing floor
- _____ hyperactive

MOOD:

- _____ apathetic
- _____ sulking
- _____ euphoric
- _____ irritable
- _____ depressed
- _____ anxious
- _____ brooding and preoccupied
- _____ hostile
- _____ calm
- _____ cheerful
- _____ pleasant
- _____ spontaneous

CONTROL:

- _____ performs many irrational acts
- _____ loud and noisy
- _____ swearing and cursing
- _____ destructive
- _____ assaultive or combative
- _____ impulsive

MENTAL CONTENT:

- _____ feelings of guilt
- _____ feelings of unworthiness
- _____ feelings of influence
- _____ apprehensive
- _____ fear of loss of control
- _____ physical complaints
- _____ talking of suicide
- _____ disoriented
- _____ confused
- _____ delusions

RELATIONS WITH STAFF:

- _____ resentful of staff requests
- _____ tube feeding required
- _____ poor self care
- _____ suspicious and distrusting
- _____ negativistic and resistant
- _____ demanding
- _____ complains about ward and routine
- _____ over-submissive to suggestions
- _____ misidentifies personnel
- _____ threatening to personnel
- _____ friendly and responsive
- _____ quiet but responds on approach

RELATIONS WITH PATIENTS:

- _____ socially incommunicative
- _____ usually alone
- _____ bullying others
- _____ dominating
- _____ seeks contacts freely
- _____ insecure
- _____ actively participates with group

Pertinent comments:

- Received EST _____
- Seventh day of Medication _____
- Refused medication at _____
- Other sedation given _____
- Sleeping pattern _____
- Seclusion necessary _____
- Other _____

FIG. 5

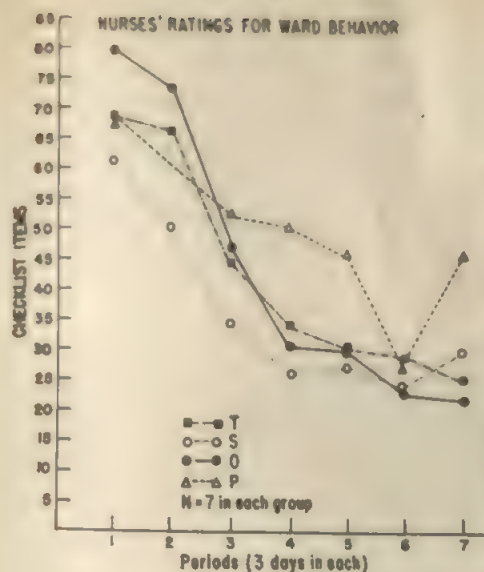


FIG. 7

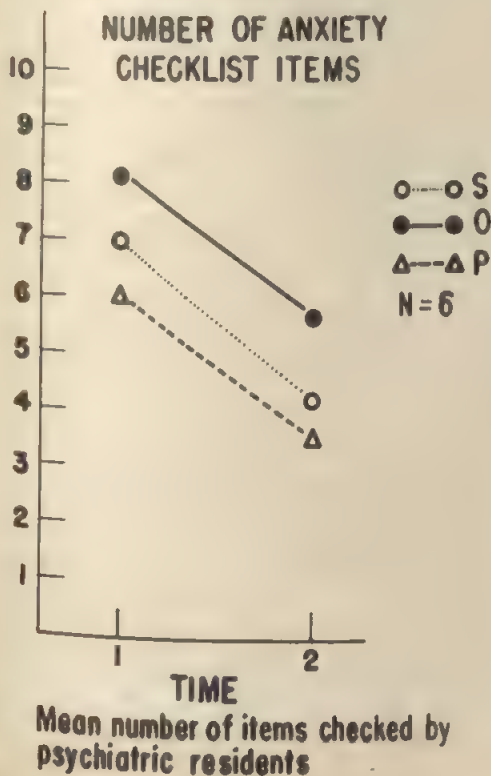


FIG. 8

The Minnesota Multiphasic Personality Inventory
 Starke B. Hathaway and J. Chamberlayne McKinley

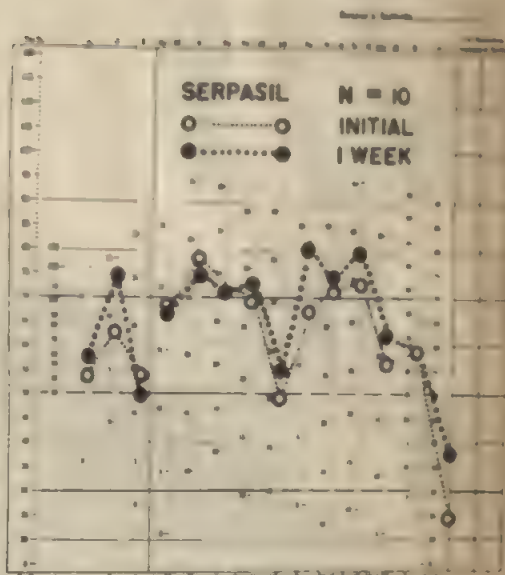


FIG. 9

The Minnesota Multiphasic Personality Inventory
 Starke B. Hathaway and J. Chamberlayne McKinley

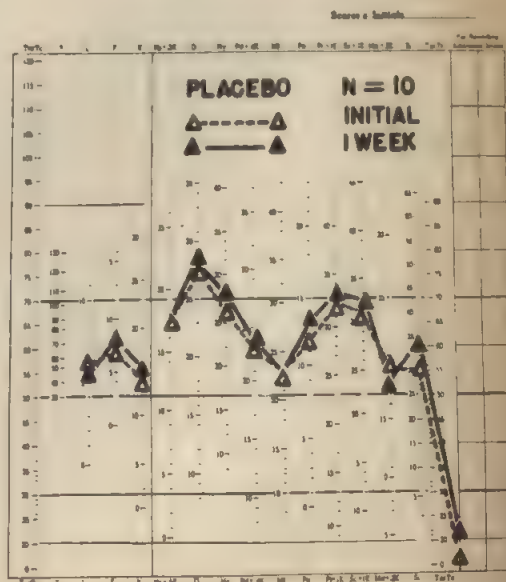


FIG. 6

Hating Scale of Anxiety

Subject: _____ Enter: _____

Total time patient observed: _____ Date: _____

INSTRUCTIONS

Mark (0) for absence of the sign.

Mark (+) for presence of the sign.

Mark (++) if sign is present and is severe.

1. Overt signs of tension or anxiety:

- a. RESTLESSNESS (e.g., shifting in chair, fidgety) _____
- b. IRRITABILITY (e.g., hostile reaction to frustration) _____
- c. SPEECH DISTURBANCE (e.g., halting, blocking, pressure of speech, excited speech) _____
- d. TREMORS (e.g., shaking of hand or facial muscles) _____
- e. HAND WRITING HANDS OR FOREHEAD PERSPIRATION _____
- f. STARTLE REACTION (e.g., sudden motor reaction to incidental or abrupt stimuli) _____
- g. HAND AND FINGER MANIPULATIONS (e.g., of objects, wringing of hands) _____
- h. IMPAIRED CONCENTRATION OR ATTENTION (e.g., failure to comprehend simple statements, asks interviewer to repeat statements, preoccupied) _____
- i. MOTOR AWARENESS (e.g., fumbling of objects, bumps into objects) _____
- j. HYPERSENSITIVENESS (e.g., overreaction to slight stimulation, to slight verbal criticism) _____
- k. OTHER _____

2. General estimate of degree of overt anxiety.

-2	-1	0	+1	+2	+3
(Extreme lack of concern apathy)		(Normal adult individual in <u>this</u> situation)			(Overt, panic state)

DISCUSSION

In the light of the physiological and psychomotor changes noted with the administration of reserpine and chlorpromazine it does not seem possible to discuss the clinical findings on the basis of ineffective levels of medication. No undesirable side-effects have been noted with this level of medication, nor have the patients in any of the groups expressed any dependence upon medication.

We have retained our usual psychotherapeutic endeavors when a patient is in need of a sedative including the usual "milieu therapy" which obtains on our psychiatric wards. In other words, the drugs have been introduced into a therapeutic setting which is not constricted because of their exhibition. Besides inert placebo, an active placebo is also introduced into the design for the following reasons: if on a particular psychiatric unit some patients are placed on placebo and other patients on the active drug, the doctors and nurses may pick up cues sufficient to indicate an active drug rather than an inert placebo. The patient may also pick up some change in his internal milieu which he communicates to his attendants. Through suggestion, a relatively non-specific effect can be amplified by the expectant attitudes and feelings of those in the therapeutic team. It enhances the efficacy of the design if these tranquilizing drugs are also compared with an active placebo which simulates some of the sedative effects.

Tested in this way in this psychiatric setting, the drugs used do not yield any more rapid therapeutic gains, or more desirable patterns of mental, emotional or behavioral changes than those achieved by existing treatment procedures. Our continued evaluation of these tranquilizing drugs in the management of acute mental disturbance on our inpatient service in an atmosphere which avoids irrational enthusiasm as much as unreasonable insistence on drugless healing thus reaches the sombre conclusion that there is improvement in all groups with no special interaction with the specific medication to be found; although there are some other details not directly related to immediate clinical improvement.

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DISCUSSION

T. R. ROBEK, M.D. (Orange, N. J.): It is research such as this study by Doctors Abse, Dahlstrom and Tolley which makes science what it is, namely, the relentless search for the truth. We should feel deeply indebted to them for calling these astonishing findings to our attention.

Since my own astonishment over the fact that placebo therapy (according to the authors) was equally efficacious in comparison with chemotherapeutic agents known to be sedative or tranquilizing to many thousands of patients, according to the published reports of hundreds of investigators, and in my own experience, I was intrigued with the prospect of discovering if possible what the artefact is in this report. I have leaned heavily upon our colleagues who were intimately associated with the early research on reserpine and chlorpromazine. The comments will be a distillate of many short discussions of this sort and a single most significant reference to Nathan Kline's earliest paper on reserpine.

This short period of observation thwarts the recording of the very best results that are to be anticipated from reserpine—for all those who have conducted research on this tranquilizer have pointed out that one must expect a period of turbulence during the first and second weeks of treatment before the real tranquilizing effects can be expected. Thereafter, however, the continued good effects may be expected. Also, those who follow their patients for long periods describe even better tranquil effects in the second to fourth months, and even for longer more sustained periods.

As far back as 1933 Chopra and Gupta noted that it was common practice in Bihar, India, to put children to sleep with Rauwol-

fla. It was called "pagla-ka-dacra" meaning "insanity herb" at the bazaars where it was sold. These authors then commented "on account of its cerebral depressant properties, the alkaloid should prove to be a valuable sedative drug." Their prediction was amply verified by the great flood of unscientific papers sparked by those of Kline, Crane, Sainz, Barsa and many others which filled our psychiatric journals and the *Saturday Evening Post* from 1954 on.

We had never before possessed a drug capable of calming schizophrenia as did this remarkable snake root alkaloid, or of reducing hypertensive blood pressure to normotensive levels.

Very soon thereafter chlorpromazine, a drug synthesized in France, was found to possess almost identical therapeutic effectiveness. Certainly it is common knowledge that these two drugs are effective in sedating psychotic disorders and that they do have hypotensive properties when used in effective dosage. Therefore, it would seem unlikely that many psychiatrists will be dissuaded from using these tranquilizing chemicals by this report that seems to show that a placebo has equally effective tranquilizing properties.

Thus one is confronted with the question: Where is the artefact in the study presented by Drs. Abse, Dahlstrom and Tolley? It is my belief that the artefact is the surprisingly short period of observation—one week only.

In Nathan Kline's objective studies reported in 1954, 4 physicians and 4 nurses took blood pressures on all patients in a ward on 4 separate occasions one month apart. First values were obtained immediately pretest and the last immediate post test, and patient behavior was recorded by ward personnel from the end of the first month on.

It was learned from these studies on ward psychiatric patients that significant blood pressure recession occurred in response to Serpasil, namely: from 127/76 down to 118/68 (mean blood pressure)

Raudixin down to 117/68. The recession caused by placebo was less in these longer observed cases than found in Abse's study, i.e. from 127/76 down to 121/74—only 6 points in contrast to the 22 points lower in Abse's study.

The only satisfactory explanation suggested for the significant drop in blood pressure demonstrated in the placebo treated cases, is the effect of "total push," namely the increased attention given to all patients, placebo cases included, by nurses' observations, extensive psychological testing, etc. plus the administration of a supposed specific medication. One must admit it is difficult to see why such a drop as 22 points occurred; therefore, we must ask, would these same findings show up one month or two months or four months later on the same regime?

It is reasonable to suppose that more consistent tranquilization would be found in those receiving specific therapy for the longer period.

REPLY

D. W. Abse, M.D.—Dr. Robie's chief criticism of our report is the short period of observation. It should be clear from the findings reported that some of our parameters extend over a three week period. We are also engaged in work in a state hospital setting which will enable us to extend our period of rigorous observation very considerably. Even so, the point we wish to make is that in acute disturbances our findings suggest that the inert placebo as well as the standard sedative lead to effective tranquilization, not distinguishable from the action of the tranquilizers. Dr. Robie indicates that there is a delayed action in terms of the tranquilization from reserpine. If this is so, our work indicates that there is no need to give the drug in so far as tranquilization within three weeks is concerned. However, there may be other reasons for doing so, hinted at in our mention of findings not related immediately to clinical improvement, which we hope to understand in the course of our future work.

MEDICO-LEGAL ASPECTS OF POST-TRAUMATIC EPILEPSY

IRWIN N. PERR, M.D.¹

It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.

—Sherlock Holmes

Courts are often called upon to render decisions based on the relation between injury and disease. That the type of testimony allowed in courts is often distorted and twisted is apparent to many physicians. Although certain problems may be quite common to many cases, each court presentation remains an entity unto itself; of this, Dean Pound (35) has stated,

The conditions of today call for planned and orderly cooperation of the lawyer and man of science in doing systematically for types of questions what has been done unsystematically and often blunderingly for each case as it arose.

Post-traumatic epilepsy occupies a rather unique place in the field of legal medicine in that it is one of the few diseases that develops long after the related injury. Therefore the probability or improbability of such a complication is a very important medicolegal consideration. Previous articles (2, 10, 11, 14, 32, 33, 43) have commented on various general aspects of the relation between epilepsy and the law. This paper covers the following questions: 1. What is the relation between injury and epilepsy? 2. How is post-traumatic epilepsy recognized and differentiated from other types of epilepsy and other illnesses? 3. What are some of the features of the course of post-traumatic epilepsy? and 4. How does one estimate the likelihood of post-traumatic epilepsy developing following a head injury? Although answers to these questions are not clearcut, there is much information available on which to base a reasonably expert opinion.

Probably in no other field of medicine is the position of the expert medical witness more difficult than in testifying in cases dealing with head injury. Between limita-

tions of medical knowledge and vaguely defined clinical entities on the one hand and the avid partisanship in the courts on the other, the physician finds that being an "expert" is no easy task. Referring to this problem, Hamby (17) states,

When (a) mishap finally occurs, the patient often finds himself obliged to seek legal aid and to obtain the financial coverage he had so fondly imagined earlier was his by right of purchase, of employment, or by virtue of citizenship in the modern state. He now suddenly plunges into a bewildering pool, the currents of which he only vaguely may have suspected earlier. To stay in business, his insurers attempt to minimize his complaints and thereby his compensation. To counteract this tendency, his lawyers inflate the estimate of his damage. Members of the jury bend toward fat or lean settlements according to their generosity with other people's money, or to their cynicism. The doctor's dilemma lies in giving testimony based on medical fact in the midst of frank and frantic partisanship.

Thus one encounters this representative statement by a very prominent plaintiff's attorney, Belli (4).

Traumatic epilepsy may not show itself for as much as 18 years after the damage to the brain. One time the author (Belli) was presented with a case of a 3-month-old child that had been placed in a hospital for surgery on a cleft palate. The day after the operation, unaccountably, the child was seen in its bed with a stellate (star) skull fracture. The recovery was uneventful. A year later the most complete examination revealed not a sign of brain damage. Should settlement be postponed for some 21 years until majority is reached, when there would probably be no chance of sequela (although there have been cases that manifested themselves years later)?

This specific example will be discussed below to illustrate the probabilities involved in such cases.

Another aspect of this problem, most important to the examining physician, is that reported by Hyslop (18) who studied 750 head injury cases involving litigation. Of these, 65 (8.6%) raised the possibility of

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post-traumatic epilepsy. In 13(20%), he found focal brain damage and verified seizures. In 2 cases, the seizures occurred in the first 6 days following injury, with no further attacks (so that a diagnosis of "epilepsy" would not be justified). The other 11 cases all developed within 26 months following the injury. The remaining 52 cases were evaluated quite carefully; all claimed a head injury of at least a concussion nature. In 12 cases, investigation revealed no injury at all; in 3 cases there had been merely a laceration of the scalp, with careful coaching by the claimant's lawyers to bring in the question of epilepsy. In 18 cases the injury occurred as the result of a seizure; of these, 7 admitted previous attacks and 5 others were later shown to have had previous epilepsy (which had been diagnosed prior to the alleged injury). Six cases were those in which the individual had developed idiopathic epilepsy without an antecedent injury. Four had had previous head injuries which at first had been denied. In not one of the cases of focal brain injury was there an attempted fraud; of the other 52, 28 (54%) showed malingering or fraud with respect to the character of the injury or its effects. Thus the number of frankly fraudulent cases outnumbered the true cases of post-traumatic epilepsy by more than two to one. No similar studies have been found, but this report brings clearly into focus one of the chief difficulties facing the examining physician.

There have been many legal cases in which post-traumatic epilepsy was a prime consideration. Unfortunately, the medical data contained in the official legal records are too sparse to allow comment. Some aspects of these cases will be illustrated below. The various questions raised are most important and stress the fact that adequate evaluation is essential inasmuch as epilepsy is a disabling disease with great social handicaps to those so labeled and it is considered by laymen to be a most revolting disease so that compensatory awards tend to be high.

In *Kuettel v. Vradenburg*(57), the claimant had a depressed skull fracture requiring surgery in order to remove bone and dirt from the brain, with resultant

neurologic damage. The medical expert testified that the patient was likely to have a spastic paralysis and that such injuries are "likely to cause people to have convulsions or epileptic fits." In a New York case(55), the plaintiff was hit by a falling rock at a state park, sustaining a deep penetrating fracture of the skull. One of the resulting complications was post-traumatic epilepsy which was a factor in the final award of \$72,867.28. In *Nagala v. Warsing*(59), a boy, 3 years, 10 months old, had a compound skull fracture, with much brain damage, and unconsciousness of 13 day's duration. In this case, no specialist in a neurological field testified, but there was clearcut evidence of poor coordination on the right side and ocular difficulties. Among the elements considered in reaching an award were the possible development of personality problems and epilepsy.

A common situation is that where epilepsy develops and the patient claims that it was the result of an antecedent injury. In *Cochran v. Wimmer*(54), a claimant attributed the onset of epilepsy to an alleged injury 4 days earlier. There was no external evidence of a physical injury. The court ruled that the problem was the determination of whether this was traumatic or idiopathic epilepsy, and thus that this was a question of fact to be decided by the jury. In *Bartholomew v. Impastato* (53), the court ruled that opinions voiced by two physicians, as to mental injuries which might result from cerebral injuries sustained by a 3-year-old child due to fault, were too speculative to warrant an award of damages based on the conclusion that the injuries were permanent.

The predictability of the future development of epilepsy is most important in the granting of an award. In *Thompson v. Anderman*(60) a boy of 13 with the mentality of a 10-year-old had a basal skull fracture, contusion of the brain stem, and hemorrhage from the left ear. Taking into account his age, life expectancy, as well as the possibility of epilepsy developing, an award of \$54,000 was granted. All 3 doctors agreed on a possibility of epilepsy, but did not feel that it was likely in view of the fact that more than 3 years had passed since the injury, one expert stating, "We are always

leery about a seizure developing 3 years after the injury." In another case(56), there was an award of \$15,000 for a skull fracture and lacerations sustained by a 6-year-old "who would probably suffer in later years from convulsive disorder." Bony fragments were removed from the brain, and a small metal disc inserted in the skull. The EEG suggested a focal convulsive disorder in the left temporal area "probably with some grand mal component." Testimony stated that, "during the war 50-75% of those receiving such wounds developed convulsive disorder" and that "75% of those with an abnormality like that of appellee (the claimant), resulting from injury, will sometime develop focal epilepsy."

An interesting case was that of Melendez v. N.Y.C. Omnibus Corp.(58) where a 46-year-old cook, alighting from a bus, suffered a skull fracture with traumatic epilepsy, post-traumatic psychosis, right-sided paralysis, and aphasia. The court reduced the award when it was shown that the plaintiff had not worked for 23 months prior to the injury and that he had a history of psychoneurosis for which he had previously been discharged from the army.

These illustrations point out some of the problems which arise in courts concerning post-traumatic epilepsy.

FREQUENCY OF POST-TRAUMATIC EPILEPSY AS COMPARED WITH OTHER TYPES OF EPILEPSY

When epilepsy develops, the type and cause must be ascertained, inasmuch as post-traumatic epilepsy is compensable in contrast to idiopathic epilepsy and other types which are not. Statistically, post-traumatic epilepsy is a relatively insignificant type of epilepsy. Idiopathic epilepsy constitutes about 78% of epilepsy while post-traumatic epilepsy occurs in about 3 to 5% of cases. Thus idiopathic epilepsy is found 15 to 20 times more commonly. Table 1 illustrates this incidence in two studies.

Another large report from the Montreal Neurological Institute(19) showed that in 2,000 cases of epilepsy, only 86(4.3%) were post-traumatic in origin. Thus, when a case of epilepsy is presented, all causative factors must be evaluated. The discovery of a brain tumor in an alleged post-traumatic case may be life-saving.

TABLE 1

RECURRENT CONVULSIVE SEIZURES IN
2,000 NON-INSTITUTIONALIZED CASES OF
EPILEPSY AT ALL AGES

<i>Presumed causes of seizures</i>	<i>After Livingston (19)</i>
Non-demonstrated	77.6%
Cerebral Trauma	5.7
Birth Injury or Congenital Defect	5.6
Brain Infection	4.2
Brain Tumor	2.6
Cerebral Circulatory Defect	1.9
Extracerebral Causes	0.9

ANALYSIS OF 689 PATIENTS WHOSE ATTACKS
BEGAN AFTER 20 YEARS OF AGE

	<i>After Livingston (19)</i>
Idiopathic Epilepsy	77.2%
Hypertension or Cerebral Arteriosclerotic	12.1
Alcohol	4.1
Post-traumatic	2.5
Neurosyphilis	1.6
Pregnancy	1.2
Cerebral Birth Trauma	0.6
Brain Abscess	0.3
Brain Tumor	0.3
Cysticercosis	0.1

SOME PATHOLOGIC FACTORS

Epilepsy is a disease of the brain; therefore, in order that post-traumatic epilepsy develop there must be an injury to the brain. "Laceration of the brain is an essential factor—whether or not there is injury to the skull"(8). Injury to the brain can occur indirectly as in a contre coup injury whereby the tips of the temporal poles are traumatized by transmission of the force of the blow or injury may result directly from trauma in the area of the blow. There may be damage from a closed head injury in which there is no depression of bone in which case the injury may be a scalp laceration, concussion, or even a non-depressed fracture. On the other hand, there may be a compound fracture with penetration of the dura matter with direct and obvious injury to the brain. The distinction between these two types of injury must be kept in mind in evaluating this problem as the likelihood of a subsequent epilepsy correlates to a great extent with the type of injury. Thus scalp injuries

A lesion skull injuries may be merely incidental. In addition factors such as extra-cerebral bleeding may not be related to the problem of epilepsy so that *hematoma per se* without cerebral damage would not be a likely causative factor. Analysis of type of injury will be elaborated below.

INCIDENCE OF POST-TRAUMATIC EPILEPSY FOLLOWING HEAD INJURY

Analysis of reported statistics must be based on many distinctions, the two most important of which are (a) war reports versus civilian studies and (b) closed injuries as opposed to penetrating injuries. Because of numerous variables, few studies are comparable and each report must be analyzed in its individual context. For example, based on published reports, one can state that the incidence of epilepsy following head injury is 0.1% to 50%. Obviously the quoting of any particular number conveys little; some reports even indicate that the likelihood of epilepsy following head injury is less likely than in the absence of any injury.

Even wartime studies, despite the fact that they are the most common source of statistics, contain much conflicting material. Numerous studies based on the experience in World War I and World War II are available from many countries. The range of incidence here was 1.5% to 49% (compared to the incidence in the population at large of 0.5%). The British Ministry of Pensions reported an incidence of 800 epileptics (4.5%) in 18,000 gunshot wounds of the head. Though several studies are in the general range of 2 to 7%, others report 12.1% (a French report), 44% (a German study of 562 cases), 27%, 49.5% (of 1,234 cases), 45%, and 43% (of 820 cases). The basic question, of course, pertains to the group being reported inasmuch as this is apparently the source of much confusion. In contrast to the above figures is the largest single study(12) reported of the civilian population of Switzerland in a 14 year period from 1919 to 1933. Here there were only 50 cases of traumatic epilepsy in 47,130 head injuries, an incidence of 0.12% or less than that of the general population.

Why is it then, that the war studies report high figures in comparison to studies

of civil injuries? Let us look at a well known study, that of Ascroft(1). In 1904 he reported on 317 cases from World War I; of these, 34% had seizures. In cases where there was penetration of the dura matter the incidence was 45%; when there was no penetration, the incidence was 23%. There are several factors for this relatively high "incidence." First, a number of persons were included who had seizures immediately following the injury (even if only one seizure) without recurrence. Secondly, many cases were excluded because of insufficient data, and this would apparently contain more cases who did not develop epilepsy. Thirdly, many minor injuries were not included; neither were cases where the damage was to the cerebellar area of the brain. The group in general was one in which the members were severely injured. A fourth very important factor was that these injuries were caused by high velocity missiles, which caused great brain damage in contrast to usual civilian injury by a blunt instrument at considerably lower velocities.

The differences between war and civil injuries have been commented on by many. Siris(41) reports,

Among the ways (in) which head injuries of war differ from those of civil life is the incidence of subsequent epilepsy. . . . The development of this condition following all types of civil head wounds is considerably lower, running in general between 0.5 and 2 per cent, not much higher than the incidence of epilepsy in the population at large.

Sachs(40), noting the difference between missile and blunt injuries in the causation of epilepsy, comments,

It is very striking that the incidence of epilepsy following fractures of the skull in civil life is far less frequent than in war wounds, and, of course, one obvious difference is that in the war cases, compound fractures are much more common.

Basically much can be summed up by this statement(15),

Suffice it to say that the highest incidence claimed is 20% and the lowest a good deal less than that in the general population; and that it is at least very probable that the first figure relates to a selected group of severe head in-

juries and the second is diluted with many trivial cases.

Further surveying of reports reflects the variance in reported incidence. In one war study (21) of 200 cases of severe brain injury, caused by penetration of the dura mater by artillery shell fragments and rifle bullets, the incidence of epilepsy was 16.5% (33 cases). One English study (44) showed a less than 2% incidence where the dura was not penetrated, compared with a 27% incidence where there was penetration with brain damage, while another English report (37) of 820 cases of penetrating brain wounds reported an incidence of 43%. However, here again one runs into the custom of classifying as an epileptic the veteran who had but one seizure. Two German reports (3, 7) report incidences of 44% and 49.5% while in 279 American cases (51) the incidence was 36.2%.

Seizures following lobotomy (a direct injury to the brain) occur in 25.6%; 60% of these are controlled by medication (13). Bickers (5) reports the incidence in open head injuries as 5.5 to 20% and in closed head injuries as 2.5% with seizures after simple concussion almost unknown.

Most reports concerning closed head injuries give an incidence of 2 to 6% (34). Military reports indicate a higher incidence, but here again one sees the results of high velocity missiles causing injury as well as the apparent inclusion of only the more severely injured. In general, reports from civilian studies indicate an incidence less than one-third the rate of that in military reports.

A very important study is that of Penfield and Shaver (31), a summary of which is shown in Table 2. Most important was the finding that in 126 brain concussions there were no cases of post-traumatic epilepsy—a finding which has been supported elsewhere. In 407 head injuries, the total incidence was less than 2.5% (11 cases).

The larger the series of cases, the lower the incidence reported; the largest series ever reported being that of Feinberg (12) where the incidence was 0.12% in over 47,000 cases. Of these, Denny-Brown (8) says,

The series of Feinberg is therefore by far the largest unselected group of civil head injury,

TABLE 2

INCIDENCE OF POST-TRAUMATIC EPILEPSY FOLLOWING VARIOUS TYPES OF HEAD INJURY

Type	After Penetration of Dura		
	Fracture	Non-fracture	Total
Scalp wounds without fracture	194	1	0.5
Concussion, contusion, or compression above	40	0	0
Fracture without proven dural tear including subarachnoid hemorrhage	150	1	5.1
Fracture with dural tear	38	3	7.9

and the best figure we have at present for such a group.

In that series, the rate of epilepsy was 5 per 1,000 with fractures (0.5% or the same as that in the general population).

THE RELATIONSHIP OF FRACTURE, HEMORRHAGE, AND OTHER RELATED INJURIES

A pertinent question is "what is the likelihood of epilepsy following a skull fracture with no depression?" Denny-Brown (9) states,

It may be noted . . . how clearly the figures show that fracture of the skull is without importance in the question of epilepsy.

Penfield (28) comments,

Closed injury to the skull, regardless of its severity, rarely results in post-traumatic epilepsy. . . . The likelihood of epilepsy is greatly increased in case the dura has been penetrated and the brain lacerated by fragments of depressed bone or missile. This is apparently quite independent of the severity of the cerebral concussion and intracranial hemorrhage which may have attended the injury.

Epilepsy is rarely found after subdural hematoma, meningitis, thrombophlebitis, thrombosis, etc.

Penfield (27) further states,

Brain laceration more often causes seizures than cerebral contusion or closure of a cerebral vessel. Subdural hematoma and internal hydrocephalus never do unless some other local complication is present.

These factors can be summed up in this statement by Denny-Brown (9) :

Depression of an area of bone in the cranial vault is not necessarily a severe or dangerous happening. . . . The important feature is whether or not the dural lining of the skull is torn by a sharp edge of bone jutting inwards . . . a simple fissure in the vault of the skull is not of itself harmful. . . . The cases of war injury demonstrate that fracture *per se* is not of any real moment in this question. . . . It must be remembered that the cause of epilepsy is damage to the brain.

THE MEANING OF A CONVULSION SOON AFTER INJURY

An essential element of epilepsy is its recurrent or periodic nature(32). Since there are many other causes of convulsions, this element must be found in addition to other characteristics of epilepsy. An epileptiform attack immediately following an injury does not necessarily denote epilepsy.

Denny-Brown(8) states,

It should be at least considered whether early convulsions deserve the name traumatic epilepsy or should the term "immediate traumatic epilepsy" be given some special annotation. There are cases where the diagnosis of epilepsy was made on a single convulsion in the early stage of severe head injury, without subsequent disability, and where diagnosis interfered with subsequent employment. . . . Because a drug, or electric shock, or anoxia, will provoke a convulsion, it cannot be maintained that "epilepsy" is thereby produced.

Thus convulsions immediately following the injury may indicate only a temporary response to an injury. As such, they usually disappear. In contrast, the basic pathology behind post-traumatic epilepsy is scar formation which usually takes months to develop.

This is confirmed in many reports. Marsh(26) states that not every case of convulsive disorder which follows an injury to the head is necessarily a bona fide case of post-traumatic epilepsy. Cavins(6) comments that Ascroft's investigation appears to show that fits which occur in the first two weeks after injury and operation do not predispose to epilepsy at a later date and that this is in agreement with the experiences of patients who have seizures in the first days after subarachnoid hemorrhage or after the removal of brain

tumors. Penfield in discussing Watson's paper(51) remarks,

In Ascroft's figures of 45% of epilepsy after injury, he included the patients who had seizures during the first two or three weeks after brain injury. But only 20% of those patients will become chronic epileptics who have recurring seizures. The percentage is thus too high.

Walker has done much work on the subject of post-traumatic epilepsy(36, 45, 46, 47, 48, 49, 50). He states(45) :

Paroxysmal alterations in the state of consciousness very commonly follow a head injury. Even shortly after a blow producing only a momentary loss of consciousness, the victim is likely to feel dizzy and light-headed and to black out when he assumes an erect position. These minor lapses are generally considered as due to nervous instability producing a temporary ischemia.

He further remarks(48) :

Some members of the legal profession . . . imply that a few dizzy spells or momentary blackouts after a head injury and an abnormal electroencephalographic finding are sufficient to establish the diagnosis of epilepsy, with all the stigmas attached to the "falling sickness," and who, on this basis, ask a large award to compensate their "epileptic" clients for the recurrent seizures that will mar his or her future. Such a contention is obviously false since neither these clinical manifestations nor abnormal brain waves are adequate for the diagnosis of a convulsive disorder *per se*.

HEREDITY AND THE DEVELOPMENT OF POST-TRAUMATIC EPILEPSY

Some authorities feel that predisposed individuals are more likely to develop post-traumatic epilepsy, and that constitutional factors exclusive of the injury should be considered as a causative factor. Other studies deny the validity of this concept. For instance, one study(36) reports that families of post-traumatic epileptics show a 4.5% incidence of seizures compared with 3.4% in normals and 17% in families of all epileptics. That there is a familial disposition in idiopathic epileptics is well verified, as is shown above. Slater(42) states,

Some degree of inherent susceptibility may be present in persons who suffer "traumatic" epilepsy.

Walker(47) and Siris(41) have discussed this theory. Expressing a contrary view, Phillips(34) states,

There is no reason to suppose that the subject of cranial trauma is more likely to suffer a fit if he has a . . . family history of epilepsy.

Others(26, 51) agree with this viewpoint. Thus, at present, there are conflicting views on this subject.

TIME INTERVAL BETWEEN THE INJURY AND THE DEVELOPMENT OF POST-TRAUMATIC EPILEPSY

This subject is of extreme medicolegal importance as the incidence of epilepsy is closely related to the time interval following the injury. Where there has been an injury, a lapse of time, and no development of epilepsy, the reasonable or probable likelihood of such a complication is an important consideration in the assessment of damages. The lawyer, in such a case, must show that there is a 51% chance of such a complication or that such a complication is more likely than not. The claimant's attorney, in order to stress the possibility of such a sequel, may quote a few cases in which epilepsy developed following an injury 15 or 20 years earlier.

Actually, cases in which epilepsy develops many years after an injury are relatively rare. Mann(25) reports one case with a 24-year interval between injury and onset of seizures. In his paper of 1949, he reports finding only 5 cases where the epilepsy developed subsequent to a 10 year period following the injury. His patient, a woman, had been kicked in the head by a horse at age 3 and suffered a depressed skull fracture which remained palpable through the years. There were focal EEG findings. After several years of various types of drug therapy, surgical extirpation cured the epilepsy and confirmed the diagnosis. Such cases are so rare as to be meaningless statistically, although their intriguing and dramatic qualities are not to be lost in the courtroom.

More important are the results in reported groups of cases. Phillips(34) reporting 190 cases of epilepsy after closed head injuries showed that 55% develop in 3 months, 82% in one year, 85% in 2 years,

97% in 4 years, and all by 11 years. In another series(8) where epilepsy developed in 53 of 630 head injuries, epilepsy occurred in one month in 42%, in 1 to 6 months in 30%, in 6 to 12 months in 14%, in 1 to 2 years in no cases, and in more than 2 years in 13%. In an Army series(36), 27% developed within 3 months and 58% by 6 months. Walker(45) also states that 50% develop within 9 months and, of those in whom epilepsy develops within 5 years, 80% have the initial seizure within 2 years. Jasper and Penfield(19) report an incidence of 46% in the first year, 63% in 3 years, and 80% in 5 years.

Thus, approximately 50 to 80% develop in the first year and about 55 to 85% by 2 years, with a probable figure of 75% for the 1½ to 2 year period. Thus, most often, post-traumatic epilepsy will be brought into trial proceedings as an existing complication, rather than as a potential one.

OTHER FACTORS CONCERNING TYPE OF INJURY

Injuries to the motor area will give the highest incidence of epilepsy; however, such injuries do not differ to any significant degree from trauma to the frontal and temporal areas. Injuries to the occipital area or the midbrain on the other hand are not characterized by epilepsy. Russell and Whitty(37, 38, 39), Ascroft(1), and others comment on this distribution. Whether or not the presence of pieces of bone or metal embedded in the brain play a pertinent role is another question. Apparently this factor is not especially relevant to the incidence of epilepsy, perhaps because large foreign bodies are usually removed surgically, and the ones that are left do not seem to be epileptogenic. Where there is infection of brain, the incidence is higher. Early surgery does not seem to lower the incidence. The incidence is higher where there is a prolonged period of post-traumatic amnesia (PTA). In one series(15) of 38 cases, there was a PTA of more than 3 hours in 28, under 3 hours in 8, and under one-half hour in two. Many cases show no unconsciousness with the absence of unconsciousness reported in 23 to 36%.

Inasmuch as the incidence is related closely to damage to the brain, one would

expect to find supporting evidence on neurologic examination. In a well studied series of Army cases (36), 94.3% showed neurologic damage with only 14 of 246 cases demonstrating no abnormality on neurological examination. On the other hand, the presence of severe head injury does not mean that epilepsy will develop. One study (16) mentions a head injury group, with no convulsions, that was characterized by greater injuries than the cases which developed post-traumatic epilepsy.

SOME FEATURES OF POST-TRAUMATIC EPILEPSY

Two features should be mentioned: 1. Often the course is quite mild, and 2. Often the condition disappears completely. In 207 cases (45, 48), less than one-half had more than 2 attacks of any type per year. In major attacks, only 30% had more than 2 seizures a year; and of the group studied, 47% had no attacks for 2 years, 35.6% had no attacks in the period from the fifth to the tenth year after the injury (this study was a 10 year followup), and 14.6% only 1 or 2 attacks a year in the last 5 years of the period. If in the first 5 years, seizures cease for a year, the chances are 4 out of 5 that there will be no seizures in the next 5 to 8 years. If there is a cessation of attacks for 2 years, the chance of recurrence is only 2 in 100. Probably 40% of those with seizures in the first few weeks will have no further seizures.

The greater the neurologic deficit, the greater the disability from such factors as post-traumatic psychosis or neurosis, and the lower the basic intelligence, the more likely is the individual to be handicapped in his future adjustment. These factors seem to play a greater role than the epilepsy or even paralysis alone.

POST-TRAUMATIC EPILEPSY AND THE EEG

The electroencephalograph is a very useful instrument in evaluating brain function. It is one factor in the diagnosis of any type of epilepsy. Pertinent here are the findings which support a diagnosis of post-traumatic epilepsy and which may help in the differentiation of this condition from other types. The question of the EEG as a help in prognosticating the likelihood of post-traumatic epilepsy is another urgent prob-

lem. Unfortunately, the EEG does not relate well to the pathological conditions under study. Various patterns of abnormality are common to many conditions, and considerable deviation occurs even in normal subjects. Penfield (30) states,

We should agree immediately that dysrhythmia is not epilepsy and that, particularly in cases of compensation, we should be very loath to let dysrhythmia or alteration in the EEG record influence us very much. The patient who is an epileptic should be defined only as a patient who has recurring seizures.

Electroencephalographic findings following injury are of little prognostic significance. One encounters generalized and focal abnormalities, slow irregular and "spiky" focal discharges. Of the consistent slow wave focus on the EEG, Marsh (26) states that this does not prove that the patient has or will have post-traumatic epilepsy.

It signifies a focus of abnormal cellular activity which, in the majority of cases of cranio-cerebral injury, even of the penetrating type, does not result in convulsive seizures.

Williams (52) states:

An abnormal EEG persisting after a head injury does not necessarily increase the likelihood of traumatic epilepsy, but the presence of episodic outbursts of abnormal waves does. . . . Immediately after a head injury, it is usual to find some gross abnormality characteristic of severe cerebral damage during the period of resolution (which) may mimic the picture of epilepsy, but which in a few weeks subsides with gradual reappearance of normal rhythms.

As to the non-specific abnormality, he states that

the presence of this kind of abnormality in patients with head injury does not seem to be closely related to the likelihood of traumatic epilepsy.

In his series, he found larval epileptic outbursts in only 9%, but that these were helpful in diagnosis as such findings occur 3 times more frequently than in idiopathic epilepsy. Paroxysmal outbursts alone were found about equally in post-traumatic epilepsy and in head injuries without the epilepsy.

Walker (45) states,

Some years ago it was hoped that the EEG would be of diagnostic and prognostic importance in epilepsy. Experience has shown, however, that the brain waves may denote cerebral damage but do not reliably indicate or forecast convulsive complications.

In similar studies, he reports (20, 21) that 88% showed some EEG abnormality with 78% showing focal abnormality.

In one study (19) of Jasper and Penfield, localized findings (either random spikes or sharp waves) were found in 90% of the post-traumatic epileptics. It was reported that it is

questionable whether the diffuse or bisynchronous disorders are truly of post-traumatic etiology. . . . One may assume the probabilities are greatest that they are essential (idiopathic) rather than post-traumatic epilepsy.

In Gibbs' study (16), 92% of post-traumatic epileptics had abnormal records as compared with 47% with severe head injury, 85% in unselected epileptics, and 16% in normals.

The latter study by Gibbs, Wagner, and Gibbs (16) is a most important one in that it compared the EEG's of 125 cases of post-traumatic epilepsy, 215 cases of head injury without convulsions, 1,161 other epileptics, and 1,000 normal individuals. Interestingly the group of severe brain injuries without epilepsy had marked injury with all being unconscious at least an hour, 23% with brain laceration, 55% with bloody spinal fluid, 5% with depressed fracture, 21% with compound fracture, 8% subdural hemorrhage, and 2% extradural hemorrhage. The authors point out that EEG's done immediately after head injury are of little use, as at this time practically all patients demonstrate some findings and that as a result the EEG's in this study were done at least 3 months subsequent to the injury. Children were more likely to show an EEG abnormality. While in the post-traumatic series, the incidence of abnormalities remained almost constant; in the head injury group, it gradually declined over a 2 year period. Focal findings were 4 times as frequent in post-traumatic cases as in unselected epileptics, and focal paroxysmal findings were 21 times as common.

After cautioning about the danger in-

herent in generalization, the authors presented the following results.

1. Focal EEG abnormality is strongly suggestive of brain damage.

2. Other things being equal, if generalized abnormality is present 3 or more months after a mild head injury, the chances are 16 to 1 that the abnormality antedated the injury.

3. In post-traumatic cases, even though the EEG is normal, the brain may be damaged (found in 3 cases of 160, or less than 1 in 50).

4. If a paroxysmal abnormality is found 3 or more months after the injury, the chances are at least 27 to 2 that the patient has epilepsy.

5. If a patient has seizures and shows focal paroxysmal abnormality 3 or more months after head injury, the chances are 21 to 7 that he has the seizures as a result of the injury rather than as a result of the other known or unknown factors that produce seizures in an unselected group of epileptics.

6. If a normal EEG is found 3 or more months after the head injury, the chances are at least 53 to 8 that the patient is not a post-traumatic epileptic.

UTILIZATION OF MEDICAL EVALUATION AND STATISTICS IN LEGAL PROCEEDINGS

If seizures exist, the problem is to determine if it is post-traumatic and if possible to evaluate the severity. This is a purely medical problem based on some of the principles previously described.

The perplexing problem to physician, lawyer, and patient alike, is how to establish a reasonable probability that a given complication will develop. Utilizing the information here presented, one has the basis for rough mathematical estimates.

For example, in a civilian head injury caused by a blunt instrument, not a missile, with penetration of the skull and dura mater, the incidence of epilepsy will probably not reach twenty per cent. Since at least two-thirds of cases of post-traumatic epilepsy will develop within a 2 year period (and this is a minimal figure), if by the end of 2 years the patient has not developed epilepsy, he now has only a 6.6% chance of doing so. Thus, other fac-

tors excluded, the presumption becomes that the odds against the development of post-traumatic epilepsy are 16 to one.

As another example, one might return to the semihypothetical case of Belli mentioned earlier. The key features were 1. A non-depressed skull fracture, 2. No evidence of penetration of dura or local brain injury, 3. No evidence of an abnormal EEG, 4. Negative neurological examination, 5. The passage of a year, and 6. No history of injury (and if one was present, apparently not an injury by a missile, nor a severe head blow at high speeds by a blunt instrument).

It is not necessary to comment on all these features. As to the first, the incidence of post-traumatic epilepsy in such cases may be hypothecated as being less than 2% (many neurologists feel that, without local brain injury, such an injury is almost totally irrelevant to the development of epilepsy). As to number 5, since in one year more than a majority of cases will develop epilepsy if, in fact, it will develop at all—then the chances here become less than 1%. The odds are now so low that without localizing brain injury and relevant EEG findings, if epilepsy did develop, it would most likely be a case of idiopathic rather than post-traumatic epilepsy. Without laboring the point, it may be summed up by saying that this case has become a statistical nullity.

To quote an expert in this subject, A. E. Walker (49)—admittedly out of context:

May we not say, then, with reasonable medical certainty, that if a patient without neurological symptoms or deficit and having a normal EEG has gone two years after his injury without seizures, he will not develop post-traumatic epilepsy?

Smith (43) in his excellent article states:

The risk of epilepsy following head injury is of the following order after simple concussion of the brain—0.02%; after linear fracture of the cranial vault—0.521%; after severe head injury with depressed fracture of the skull, fragments of which have lacerated the dura mater and brain—20 to 45%. It follows that in no case can the plaintiff prove probable future occurrence of traumatic epilepsy which has failed to materialize by the time of trial without adducing strong corroborative evidence of impending epilepsy such as significant changes

in serial electroencephalograms interpreted and supported by competent neurological opinion.

Thus, an effort to indicate a probability of occurrence where, in fact, it has not yet occurred, faces an uphill statistical struggle. Based on the factors described, the physician can give a reasonable opinion to the court for utilization in deciding such problems. However, legal proceedings are most haphazard. Logically, no claimant should ever win a case if he has not had demonstrated epileptic attacks by the time of trial. Yet to so rule would be to deny compensation to those who do legitimately develop post-traumatic epilepsy at a later date. Walker (45), in a very imaginative suggestion, recommends that instead of awarding compensation to potential post-traumatic epileptics, an insurance policy should be granted with benefits to be paid on development of the complication. In this way, the patient will be compensated if seizures develop. If seizures do not, the patient will not be stigmatized and the primary agent will not pay a penalty.

Even if post-traumatic seizures do develop, it should be clearly understood that they do not have the same prognosis and implications as does so-called idiopathic epilepsy. In fact, if a patient has had only one or two attacks within the first year or two after a head injury, I would certainly hesitate to suggest compensation on that basis. Probably some type of epilepsy insurance would be the most equitable means of handling these cases. There is excellent evidence that such patients have a good chance of living lives which will not be punctuated by convulsions.

He feels that actuaries could work out a usable system. Certainly high standards of evaluation would be needed both to screen out fraudulent claims and to protect the rights of the injured.

Related to this is the suggestion that some effort be made by an organized group of neurologists to collect standardized data on head injuries on a national scale. For instance, every head injury treated at training centers might be reported with the following information—type of injury, presence or absence of demonstrable brain injury, EEG findings, neurological examination, etc. Periodic follow-up could be done. Thus, a massive accumulation of data con-

cerning injuries in civil life could be analyzed. It is apparent from the variety of articles with frequent contradictions that failure of uniform reporting has brought confusion which is then reflected in the expert medical testimony needed in the legal disposition of such cases.

It has been the goal of this article to correlate various reports and opinions so that present knowledge may be applied as usefully and as accurately as possible.

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THE EFFECT OF RESOCIALIZATION TECHNIQUES ON CHRONIC SCHIZOPHRENIC PATIENTS¹

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Because chronic schizophrenic patients constitute the bulk of prolonged care patients in mental hospitals, there is need to identify the factors contributing to the chronicity of the schizophrenic illness and to discover better methods of management and treatment for these patients. The purpose of this study was to investigate certain aspects of these problems.

One of the principal manifestations of schizophrenia is social isolation(1, 7, 17). The patients become withdrawn, avoid interpersonal contacts, and seek a reduction in external stimulation. The isolation of patients cannot be studied in any restricted sense, but must be viewed in terms of their entire personality adjustment. The chronic schizophrenic patient shows a failure of communication, along with the use of withdrawal and autism as defensive mechanisms, which in turn impede the patient's assumption of a social role within the family and society(4). With chronicity of the illness, schizophrenic patients tend to accept their isolation, cling to it in a hostile manner, and resist the stimulation of others for establishing interaction.

The symptom of isolation may be augmented through routine mental hospital management with its limited resources(2, 5). The custodial management of the chronic schizophrenic patient is often aimed at subjection and control, rather than at an understanding of behavior. Problems arise because of the vast numbers of the mentally ill, the small number of employees with suitable training, and the relatively low status and financial rewards for such employees. Characteristically, few social contacts occur on the disturbed wards, opportunities for heterosexual interaction are limited, and patients tend to be chronically preoccupied with their own inner conflicts.

As the patient's hospitalization continues, his motivation for recovery becomes reduced, and he further clings to his hostile isolation, making it more difficult for personnel to relate with him. Thus employees may gradually begin to feel that attempts at helping patients are hardly worth the effort.

This study investigated the therapeutic effects of an intensive socialization and activity program on an experimental group of chronic disturbed schizophrenic patients. These patients were selected from a large state hospital and placed in a research and teaching hospital. The period of active work with the patients was 9 months. A control group, meeting the same criteria as the experimental group but remaining at the state hospital without any special treatment, was evaluated at the beginning and end of the project to compare changes in the 2 groups. Follow-up evaluations were also made.

The intention was to provide an approach which could have practical application within a state hospital setting(8, 9, 10, 11, 14, 15, 16). For this reason no individual psychotherapy was used. For the experimental group the aim was to make the fullest possible therapeutic use of the personnel and resources available. Individuals from various disciplines, including psychiatry, nursing, occupational and recreational therapy, sociology, psychology, and social work constituted the treatment and research team. It is realized that such a study involves numerous uncontrolled variables. This report will be concerned mainly with the psychiatric evaluation of the patients.

RESOCIALIZATION AIMS WITH THE EXPERIMENTAL GROUP

One of the major differences between the experimental situation and the ordinary state hospital was the greater number of personnel available to work with the experimental group patients. The ratio of

¹ Read at the 115th annual meeting of the American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

² The Lafayette Clinic and Wayne State University College of Medicine, Detroit, Mich.

personnel to patients was 1 to 2, while at the state hospital the ratio was about 1 to 20 or more. The participating staff were all under the direction of a staff psychiatrist who was in charge of the overall operation of the experimental program. A resident psychiatrist was responsible for working with the patients and personnel. The nursing staff had considerable responsibility in acting directly with the patients. The head nurse had administrative duty, such as conducting ward conferences, making broad assignments to the staff, and coordinating their function. Staff nurses had close and prolonged contact with patients, and worked closely with occupational and recreational therapists in planning and administering the detailed activity programs. The attendant nurses were expected to learn to know each individual patient, to acquire an understanding of the patients' behavior, and to use this knowledge constructively in promoting recovery. The social worker attempted to work closely with a family member of each patient, with the aim of stimulating interest and evaluating the home situation as a possible resource for discharge. Two sociologists lived on the ward, observing and interacting with the patients.

The goals of the socialization program were to stimulate interpersonal relationships among the patients, and to foster resocialization and integration of ego forces. The program permitted patients to operate at their own levels of functioning, with encouragement to progress to higher levels by providing suitable activities. Insofar as possible, there was an attempt to have the patients participate in the weekly patient councils and daily program planning meetings so as to fit the program to their needs and desires. The patients lived together on one ward, and were not segregated by sex in the living and dining area.

Various drugs were used in treatment, but principally chlorpromazine and reserpine. The use of drugs was dictated by disturbed behavior and was kept at a minimum. No attempt was made to standardize the use of drugs throughout the group.

All the patients participated in group psychotherapy along with various members of the ward staff. The aim of the meetings

was to encourage the patients to discuss their feelings and problems as they occurred on the ward, and the ways in which these factors were related to their illness and personality adjustment.

SUBJECTS

The patients had the following characteristics: diagnosis of schizophrenia, chronically ill and disturbed prior to the use of drug therapies, ages between 22 and 40 years, hospitalized 3 years or longer, Caucasian race, some family member available for contacts with the hospital, no marked physical defects, no recent electroconvulsive therapy, and average intelligence as estimated from clinical impression. Of the 20 men and 20 women, 10 men and 10 women constituted the experimental group, the remainder the control group. An attempt was made to match the experimental and control patients in pairs of the same sex so that they would be equivalent in age, type of symptomatology, duration of hospitalization, and general appearance. Comparative data for the 2 groups are given in Table 1.

PROCEDURES OF OBSERVATION AND DATA COLLECTION

Techniques used by the psychiatrists and nursing staff focused mainly on appraisal of the individual. Both groups were evaluated at the beginning and end of the project, and again 20 months later.

The Hospital Adjustment Scale(6, 12) was used to measure the patient's adjustment to the hospital situation; it is based on clear descriptions of overt behavior, such as personal appearance, hygiene, amount of activity, and social participation. These scales were filled out by the head nurse and a psychologist; at the state hospital the necessary information was secured from an employee who knew the patient well.

Both psychiatrists examined the patients clinically, following a standard form for mental status examination, and rated the patients on the Malamud-Sands psychiatric rating scale(13). This scale was used to give an objective indication of the degree of psychopathology; it includes items for evaluation of general behavior, thought content, mood, affectivity, and association

TABLE 1

MEAN AGE AND DURATION OF HOSPITALIZATION BY GROUPS AND SEX

	<i>Experimental Group (N=20)</i>		<i>Control Group (N=20)</i>	
	<i>Mean Age</i>	<i>Mean Duration of Hospitalization</i>	<i>Mean Age</i>	<i>Mean Duration of Hospitalization</i>
Men	29.6	6.4	32.1	8.0
Women	32.7	7.2	33.0	7.8
Total	31.1	6.8	32.5	7.9

processes. At the end of the project the psychiatrists also rated the patients' overall change. A follow-up was made by social workers to determine the status of the patients 8 months after termination of the project. Twenty months after termination the available patients were rated by the staff psychiatrist on the Malamud-Sands Scale, and the Hospital Adjustment Scale was also administered.

For the experimental group, the Malamud-Sands ratings and the Hospital Adjustment Scale were also obtained at 2 intermediate times—approximately 3 and 6 months after initiation of the project. Since these interim data did not provide any additional information, they will not be reported here.

The experimental group patients were observed at meal times by the sociologists, who recorded on a diagram where each patient sat. The tables each seated 4 patients, and there was a consistent pattern of furniture arrangement. Observations were made during the first 8 months of the project; for analysis they were grouped into 16 sets of 20 meals each. One aspect of these data will be reported here, i.e., the number of associations with the opposite sex. For each patient the percentage of heterosexual associations was obtained for each of the successive sets of meals. The 10 men were divided into 2 groups of 5 each, an "improved more" and an "improved less" group. This classification was based on the clinical judgment of the psychiatrists. The mean percentage of heterosexual associations was calculated for these groups. The women were similarly divided into 5 "improved more" and 4 "improved less." Data were not available for one woman, who would not voluntarily eat at the table.

RESULTS AND DISCUSSION

The mean Hospital Adjustment Scale scores are presented in Table 2. The experimental group was slightly better adjusted than the control group, and the women slightly better than the men, but neither of these differences was significant. The one clear change from the initial to the terminal test is that the experimental group men improved significantly ($p < .05$), coming up to the level of the experimental group women. A possible explanation of the relatively poor mean score of these men on the initial test is the lack of heterosexual interaction for them on the chronic wards of the state hospital. Female patients at least have some interaction with male physicians. The lack of improvement on the terminal test for the women may be due to the marked exacerbation of schizophrenic symptomatology in 2 female patients, which undoubtedly offset the slight to moderate improvement seen clinically in the other women. Differences between mean scores at termination and 20 months later were not significant.

Looking at the results of the Malamud-Sands ratings in Table 2, it is apparent that the two psychiatrists differed in their evaluation of the patients' psychopathology. Dr. A rated the patients slightly better on the terminal than on the initial test, but this difference was not significant. According to his ratings, the experimental group did not differ from the control group, nor did the men differ from the women. Dr. B's ratings, however, showed the experimental group as significantly less pathological than the control group ($p < .05$), and the patients in general as better on the terminal than on the initial test ($p < .025$). His ratings tend to indicate greater improvement for the experimental than for the control

TABLE 2

HOSPITAL ADJUSTMENT SCALE AND MALAMUD-SANDS RATINGS
INITIAL, TERMINAL, AND FOLLOW-UP MEAN SCORES¹ BY GROUPS AND SEX

	Experimental Group		Control Group	
	Men	Women	Men	Women
<i>Hospital Adjustment Scale</i> ²				
Initially	51.5	69.5	46.5	58.0
At Termination	66.3	65.2	39.6	60.5
20 Months Later	61.9	74.3	57.2	55.9
<i>Malamud-Sands Ratings</i> ³ —Dr. A				
Initially	54.4	57.8	57.4	60.2
At Termination	46.7	53.5	52.9	58.0
20 Months Later	56.0	49.0	48.4	52.1
<i>Malamud-Sands Ratings</i> ³ —Dr. B				
Initially	46.1	46.8	49.0	50.0
At Termination	35.2	32.2	46.2	48.8

¹ Each mean is based on 10 cases, except for the 20 month follow-up, where N=8 for the Experimental Group women and N=9 for the Control Group men.

² The higher the score, the better the adjustment.

³ The lower the score, the better the adjustment.

group. Inspection of Table 2 also reveals the interesting fact that Dr. B's mean ratings in every case were more favorable than Dr. A's. Each psychiatrist had equally brief contact with the control group patients; here Dr. B rated the patients slightly more favorably than did Dr. A. Dr. B diverged even more from Dr. A with respect to the experimental group. This is no doubt a reflection of the fact that, in addition to a generally more favorable rating tendency, Dr. B was much more closely and intimately involved with these patients than was Dr. A, whose contact with them was more limited.

Dr. A's follow-up ratings did not differ significantly from those at termination, except for the experimental group men, who were rated as significantly worse ($p < .05$); these follow-up ratings were approximately the same as the initial ratings.

In their terminal clinical ratings of change (Table 3), the 2 psychiatrists agreed quite closely in their evaluations of

the experimental group; each considered 9 patients (45%) to have shown some improvement. For the control group, they also agreed fairly closely as to the number showing improvement, but differed somewhat as to the number of patients rated worse, with Dr. A in this case giving the more favorable ratings. In comparing the 2 groups, these ratings favor the experimental group.

Since the 2 psychiatrists tended to agree more consistently in their overall clinical ratings of the patients than in their Malamud-Sands ratings, it is concluded that certain personal discrepancies occurred in the utilization of the latter device. Therefore conclusions drawn solely from the Malamud-Sands ratings are ambiguous.

Although numerically Dr. A's ratings at termination and 20 months later were essentially the same, it is interesting to note that many of these figures do not refer to the same patients, indicating the variability

TABLE 3

OVERALL CLINICAL RATING OF CHANGE

	Experimental Group			Control Group		
	Worse	Same	Improved	Worse	Same	Improved
At Termination—Dr. A	2	9	9	2	11	7
At Termination—Dr. B	2	9	9	6	6	8
20 Months Later—Dr. A	1	11	8	1	13	6

of symptomatology over a period of time.

Table 4 reports the disposition of patients at termination of the project and 8 and 20 months thereafter. At termination, 6 members of the experimental group were able to leave the hospital and be placed on family care or convalescent status. No patients were able to assume any degree of responsibility for themselves, and they continued to require supervision. During the 8 month follow-up interval, no further significant change occurred. After 20 months, only 3 experimental group patients were outside the hospital. Thus the experimental group lost its apparent advantage over the control group. The number of experimental group patients placed outside a hospital at termination may reflect the therapeutic enthusiasm of the participants. The patients' relatives may also have contributed to this enthusiasm, as well as gaining a greater acceptance of the patients' pathological behavior. The lack of any sustained improvement over a prolonged period led to their return to the hospital.

In observations of clinical changes in the experimental group, it was impressive that the accessory schizophrenic symptoms, as defined by Bleuler(3), improved somewhat, while the fundamental symptoms remained relatively intact. Such accessory symptoms as hallucinations, delusions, and hypochondriasis were reduced. The patients tended to block less often in their verbal productions, and related much better in interpersonal situations. Improvement was apparent in disturbed behavior patterns and catatonic symptoms. Thus some of the

social isolation of these patients was overcome, but the fundamental schizophrenic symptoms persisted, particularly the disturbances in the associations and affectivity.

An interesting feature evident in these patients was the periodicity of the symptomatology. Over several months, some patients improved, then maintained their improvement for a few weeks or months only to relapse again into severe schizophrenic psychopathology. At times it was possible to relate such a relapse to certain specific stimuli, such as a traumatic visit home with the patient's family. Certainly the patients were very sensitive to any type of situational stress. This marked sensitivity toward stress has tremendous significance in any attempt at rehabilitation, since return to society necessitates a capacity to tolerate a number of stresses from which the patients have isolated themselves successfully by their illness and their hospitalization.

In having both sexes function together in most of their activities in the experimental setting, a number of significant patterns of sexual behavior were observed. Autoerotic behavior, genital exhibitionism, and overt masturbation occurred rather infrequently compared with the attempts at establishing object relations. Patients enjoyed holding hands, embracing one another in certain situations, kissing, fondling, and other types of sexual advances. These occurred in a very impulsive fashion; for example, some patients would go from one to another patient, kissing and fondling, often not differentiating one sex from the

TABLE 4
DISPOSITION AND FOLLOW-UP OF PATIENTS

	Hospitalized	Family Care ¹	Convalescent Status ¹
Experimental Group			
At Termination	14	5	1
8 Months Later	13	5	2
20 Months Later	17	0	3
Control Group			
At Termination	19	1	0
8 Months Later	18	2	0
20 Months Later	17	1	2

¹ Family care and convalescent status are dependent on improvement in behavior, but not necessarily on any change in basic psychopathology.

other. Most of this behavior was heterosexual rather than homosexually directed. In discussions with the patients they expressed pleasurable feelings about it. Poor judgment was evident in their expression of such behavior, and they had little understanding of social attitudes toward their impulsive sexuality. Most of the sexual behavior was of a tactile and oral type. Although patients attempted genital stimulation, such behavior was prohibited in the atmosphere of the hospital. These observations illustrate that sexuality in the schizophrenic patient is not totally repressed nor solely narcissistic, but that attempts at some type of primitive object relation occur.

That the ability to engage in heterosexual contacts bears some relation to amount of improvement shown by experimental group patients is evidenced by Figure 1, which shows the course of heterosexual associations at meal times for men and women, divided into those who improved more and less. At the state hospital, opportunities for any heterosexual relationships were very limited, and particularly so for the men, since for the most part they had male doctors and attendants. In view of this previous history, it is interesting that for both sexes, but particularly strikingly for the men, the "improved more" patients showed in general a consistently

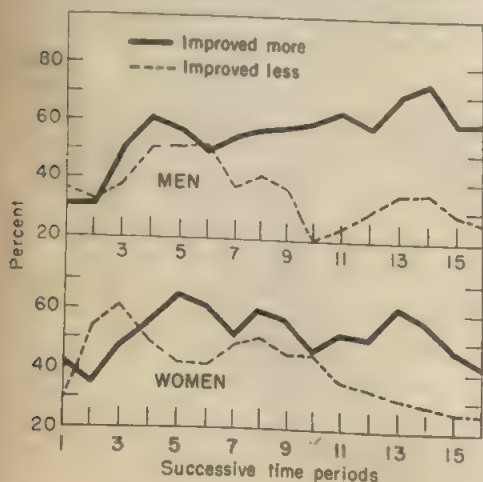
greater number of heterosexual associations at meals. For the men who improved more, there was a steady rise in heterosexual associations during the 8 months covered, beginning at about 30% and increasing to from 60% to 75% of such associations. For both the men and the women who improved less, there was a fairly steady dropping off in heterosexual associations in the last 4 months of the project, with both these groups ending at about 30% of such associations.

A number of personnel problems were manifest in this study. It is interesting to note that the majority of the personnel in the experimental situation were Negro, while the patients were all white. The effect of this racial difference was not measured, but it seems reasonable to speculate that it would make for greater difficulty in establishing close interpersonal relations between staff and patients.

Many of the nurses and attendants lacked a suitable background of education or experience for much of the work required. Throughout the project the personnel were asked to assume greater responsibility for the management and treatment of the patients, and to attempt to establish a close relationship with them, in spite of the patients' hostile isolation. Initially the personnel showed tremendous enthusiasm, but with the many frustrations involved much of this enthusiasm waned. It was apparent from the study that psychiatric nursing practices are poorly defined, and that nursing personnel are often confused in their work with patients. Status problems were created by the attempt to give a more therapeutic role to the nursing personnel; this factor may have limited their influence on the patients. The research ward staff had greater prestige and status in terms of the additional role in which they functioned, but this role required a greater responsibility and in many ways a reduction of the distance between personnel and patients. The aloofness often maintained by nursing personnel had to be overcome, and in this process insecurity feelings were often evident. With such frustrations and feelings, individual personal problems of staff members were intensified. This led to undue emphasis on many insignificant aspects of

FIGURE 1

HETEROSEXUAL ASSOCIATION AT MEALS IN
RELATION TO IMPROVEMENT AT TERMINATION



ward operations, with fewer attempts at active interpersonal contact with patients.

From the viewpoint of effects on the basic schizophrenic psychopathology, the results of this study were not encouraging. The practical application of these specific techniques to larger chronic schizophrenic populations, such as those in state mental institutions, does not seem warranted in view of the limited improvement seen in the accessory symptoms, the large numbers of personnel and special facilities needed, and the associated high financial expenditures. As far as this study has demonstrated, modifications of hospital culture have little or no impact on the basic schizophrenic psychopathology of chronically disturbed patients, and other approaches to the solution of the problem must be sought.

These results do not preclude the possibility that intensive socialization techniques are beneficial to many psychiatric disorders, including schizophrenia, particularly during its early manifestations when there is a greater chance for reversibility of the process. This problem was not evaluated in the present study. The results merely emphasize the limitations of socialization programming in attacking the basic psychopathology of the chronic schizophrenic patient and in effecting consistently satisfactory treatment results.

SUMMARY AND CONCLUSIONS

A description has been given of a rehabilitation research project for chronic disturbed schizophrenic patients who had been hospitalized on the average for about 7 years.

In the experimental group a modification was seen in many of the accessory symptoms of schizophrenia, such as disturbed behavior, delusions, hallucinations, muteness, and withdrawal; these changes allowed a tenuous type of socialization. The fundamental symptoms of schizophrenia, the disturbances in associations and affectivity, remained. The control group demonstrated essentially no change. Follow-up evaluations of the hospitalization status of both groups 8 and 20 months after termination of the study showed almost no further changes.

In the process of this study, the chronic schizophrenic patient is practicing a type of social object relationship that is disturbed in both home social and hospital social behavior. It is suggested that patients who can engage more in heterosocial contact when these are available, are more likely to show a generally improved social adjustment.

The changes observed were considered to be of limited therapeutic significance in view of the numbers of personnel involved, special facilities, and resultant costs for such a program. Further limitations influencing the practical aspects are the difficulties experienced by personnel interacting in a close relationship with chronic schizophrenic patients. These include adverse personal reactions, status problems, and difficulties in maintaining a consistent interest in the project.

It may be concluded that in the schizophrenic illness, the accessory symptomatology is related in part to psychocultural factors and can therefore be modified by socialization techniques, as described in this study.

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A CORRELATION OF SYMBOL ORGANIZATION WITH BRAIN FUNCTION (EEG)

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When physical changes of the environment operate on the sensing organs of the body, patterned impulses are impressed on the more central receiving systems to generate psychophysiological information that something has happened. Although sense data are obviously derived in a space-time continuum, the necessary repetitions and reinforcements of sense data as evidenced in "learning" prior to recognition of "significant" activity, actually tend to divorce sense data from the particularity of time. Consequently sense data appear to be of the dimensions of space. This conforms to the idea of spatial organization being paramount in discriminative brain function. Because these sense data cannot generate in the brain an exact replication of the physical excitants, the transmitted data must be patterned in such a way that the brain receiving mechanisms recognize the recurrent impulses. In that recognition must result from a coded action, it, therefore, must be an abstraction of the physical changes; I would like to designate this perceptual phenomenon as a first order symbolic process.

Inference(1), which connotes the role of indirect, impersonal determinants of behavior assumes two major forms; 1. Representational and 2. Non-representational.

In this paper the representational mode is designated as a second order symbol. Such second order symbols are exemplified by picture or sound forms which through convention, or gross two- or three-dimensional similarity to the physical data, present to the brain material that evokes, or may potentially evoke, behavior just as if the physical elements themselves had been presented. Thus, although the symbol of water in a picture has not the property of wetness, fluidity, and mass, it nevertheless conveys

to the brain the idea of the physical element with all the properties noted above, and which under certain conditions is able to generate behavior just as if the actual water were present.

When the symbol processes become sufficiently non-representational so that they in no way convey a paradigm of the physical data for which they are a token, a new level of symbolization is achieved; these I will designate as higher order symbolization processes. This higher order, abstract behavior operator may be best demonstrated in the evolution of written languages, in which the earlier representational anatomical part, or other common objects of the environment became generalized to form marks divested of analogs of their origin.

Thus, through direct sense data, and inferences derived indirectly through reactivation of remote experiential data and through higher order symbol operations, the organism is made aware of its existence. This existence is thus derived through the process of symbol formation and symbol transformation.

One facet of the second and higher order symbolization processes is brought under consideration here: the drawing of the human figure. The use of the pictorial form of man carries with it an inherent element of uncertainty. This uncertainty results from the inability to weight the relative content of the representational and higher order symbols in any particular portrayal. Even in the simplest presentation, the representation component is manifest in, at least, composition. To accentuate this basic uncertainty, any elementary part of the depiction may be construed as a second or higher order symbolization depending on the sophistication of the observer. Despite these fundamental problems, the study of picture drawing affords information as to the process of symbol formation, symbol use, and symbol dissolution.

It has been observed that the spontaneous pictorial production in many 3½-year-old

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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children may be bizarre with little evidence of representation of the human figure, even in elementary composition. To a high degree this appears to be the result of an inability to order volitionally the parts in a sequential way.

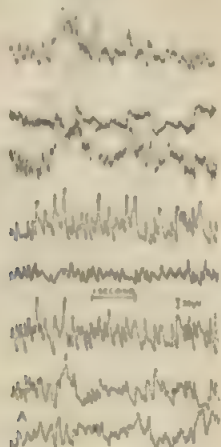


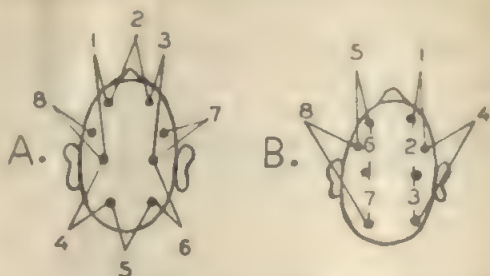
FIG. 1

SPONTANEOUS PICTURE (LEFT). PICTURE DRAWN TO DICTATION (RIGHT).

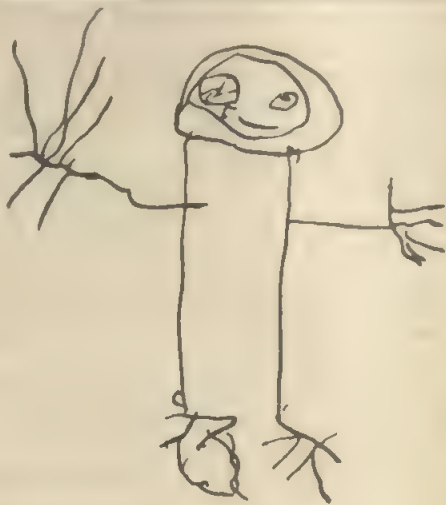
In Figure 1, the picture to the left, drawn by a child of 3½ years, constitutes the spontaneous "picture of a girl." Real effort was expended; the child named several face parts as she made incomplete, complex drawings. The picture to the right was the result of dictation; here each part was given to her by name in the following order: head, eyes, ears, legs, belly, arms, nose, mouth, and hair. It is observed that the whole person is encompassed in a closed space symbolized as "head." This output, of course, is similar to the normal production of a child of the age range between 3½ and 5½ years. This portrayal is of particular interest in that this child, as most children of this age group, can correctly point to all body parts when asked to do so from a two-dimensional manikin. Such command productions strongly suggest that the child has a much better organized body image concept than would be gleaned from the spontaneous formulation. It is of interest also, as seen in the figure, that the electric³

³ Electrode Placement: The number corresponds to tracing line. Top line is number 1.

output of the brain in these children generally is not well organized when compared with adult records.



That the form of the child's picture of a person may be quite independent of a particular culture is shown in Figure 2.



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FIG. 2

PICTURE OBTAINED FROM LACANDONIAN INDIAN BOY, AGE 6 YEARS.

This picture was drawn by a 6-year-old Lacandonian Indian boy from Chiapas, Mexico, who had only been out of the jungle for approximately 4 months. Because of bilateral congenital cataracts, the boy was not observed to indulge in spontaneous graphic expression, nevertheless the accomplished picture, in all ways, is

consistent with the average child's production of the same age in our own culture.

It has been observed that the pictorial presentation in the normal adult individual is remarkably constant. This is shown in Figure 3. The picture on the left was pro-

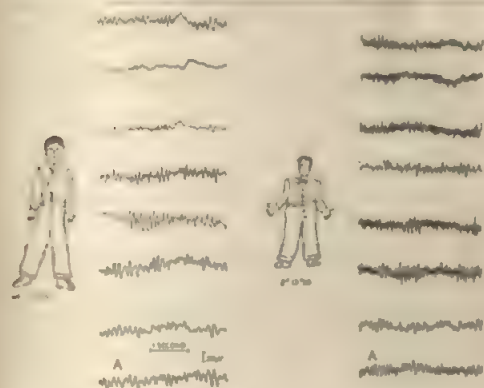


FIG. 3

CONSTANCY OF ADULT PORTRAYALS.

duced in 1955; that on the right was made in 1959. The contours and general composition are remarkably similar. The EEGs and neurological examinations were in no way remarkable. In other drawings, it is also observed that despite various distortions of the picture during the phases of most disturbed brain function, the basic contours and compositions retain their characteristics in serial portrayals. In children this conservatism does not prevail. This is demonstrated in Figure 4, where, in the course of one year, a portrayal may change from a child's type to that of the

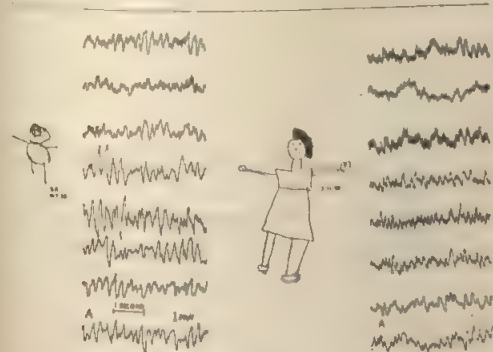


FIG. 4

MATURATION OF PICTURE DRAWING WITHIN ONE YEAR. ALSO "MATURATION" OF EEG PATTERN.

adult pattern. The EEG may mature in a similar way.

In the adult it is a common, but not an invariable phenomenon, that behavioral attributes are manifest in the depictions of the human form. Such depictions are particularly evident during stress situations (Figure 5).



FIG. 5

REPRESENTATIONAL PICTURES

The patient was a Captain in the Navy who on retirement was elevated to the rank of Rear Admiral. Approximately one month prior to examination he sustained a possible fracture of the middle cervical vertebrae. He was placed in traction by means of Crutchfield tongs and then immobilized in a body-head cast that extended from the pelvic level to the top of his head; openings were allowed for the crown of the head, the ears, face, and arms. Within a few days following this restrictive immobilization, he began to hallucinate, to indulge in mysterious Morse code messages, and to engage in a rambling continuous type of verbalization.

The spontaneous picture production at this time was certainly representative of his plaster uniform. It will also be observed that he placed his two stars over the upper part of the symbol of the cast. In such productions, there is little doubt of "self" portrayal. The EEG showed no gross abnormality. The depiction to the right is from the same patient 7 weeks later. This production occurred in a phase of "recovery"; he spoke in a low tone of voice and was entirely logical in all verbalizations. He discussed his family and his imminent discharge from the hospital. It is observed that the delineations are incomplete, perseverative and that little pressure is exerted with the pencil. He was obviously very introspective and quite ill-at-ease.

The representational quality of picture production is also evident in the large number of neurologically normal subjects at this hospital who portray uniformed persons (Figure 6). No significant EEG

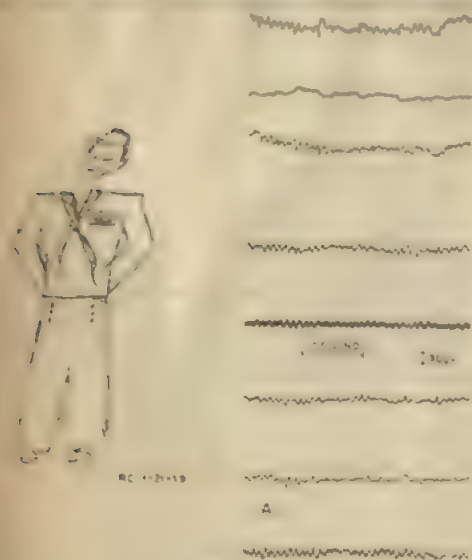


FIG. 6

REPRESENTATIONAL PICTURE.

findings are evident in the excerpt of this particular subject.

The common factors in the above types of production which have been illustrated are: (a) the presence of sentient brain organization; (b) the retention of instrumentalities to accomplish the pictorial operation.

Acute unilateral lesions of the central visual apparatus, involving the geniculocortical pathway, generally result in remarkable asymmetric distortions of the person symbol (see Figure 7).

The patient was 65 years old. Approximately 10 days prior to study, he was working as a watchman when he suddenly became unable to stand. He did not lose consciousness, nor did he complain of headache. On examination he maintained conjugate gaze to the right; there was a left homonymous hemianopia. In reading the word "Chester," he saw only the "ter" and read "Peter." He discussed his aspirations and his concern about his ability to achieve them. While speaking, he often showed forced crying. There was no evidence of denial of illness despite an almost hemianesthetic

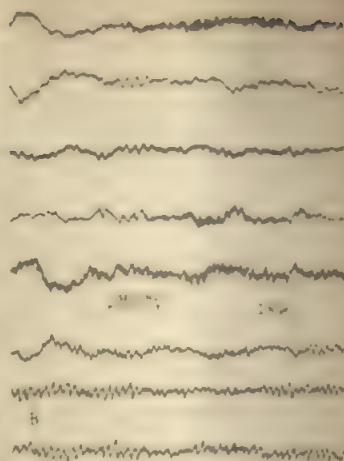


FIG. 7

DEPICTION WITH LEFT HOMONYMOUS VISUAL FIELD DEFECT.

left side; position sense of the upper extremity was absent even at the elbow joint. The reflex pattern on the left side was indicative of pyramidal motor system involvement. The picture showed a head element with attached lower extremities abutted in a disconnected way on the right side of his drawing: although the eyes were omitted, an attempt was made to place hair on the head. The EEG showed slow activity in the post-rolandic derivations of the right brain.

Another case of the effect of visual field disturbance is shown in Figure 8.

This patient was 20 years of age. Three months prior to the examination he had a strep-

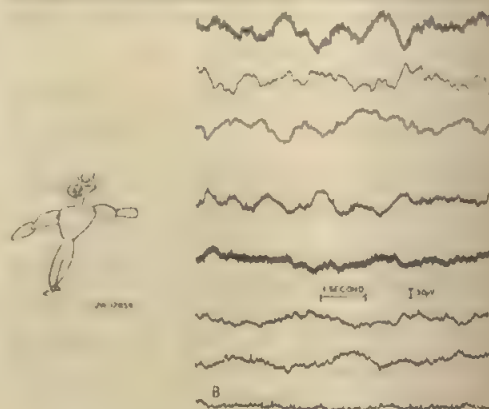


FIG. 8

FACE AND HEAD DISTORTIONS IN LEFT HOMONYMOUS HEMIANOPIA.

cessed meningitis, he apparently recovered but later developed signs indicative of a brain abscess. Following the abscess evacuation, a **spastic left hemiplegia including the face ensued**. On examination he complained of **generalized head pain**. Speech was ideationally and mechanically intact. **Over the left side epicritic sensation function was decreased**, but position sense was disturbed severely in both the upper and lower extremities. Localization of areas of cutaneous stimulation was markedly impaired. The deep tendon reflexes were hyperactive on the left, but no Babinski sign was elicited. A left homonymous hemianopia was observed; however, he seemed aware of the left space. The picture drawing showed a simplicity of composition, but was noteworthy because of the displacement of face parts and head appendages on the left side of the portrayal (his left visual field). The EEG showed an intense slow wave output over the right cerebral hemisphere.

ball in the left hand, in the right hand, the ball was turned correctly. The patient's time to get up was increased and the orientation to his park was more rapid on the left side. The legs from a rather wide base of support were pulled together, but the ankles were not crossed on the left side. His best picture drawing consisted of a remarkably distorted and unswapped individual; the extremities were approximated to the body in a rough way. The delineations were perseverative. The EEG showed prominent slow activity over the left temporal region.

Following surgery for the evacuation of a brain abscess he maintained an **inamiable facies**; he had difficulty in recognizing the spoken word. His speech was incoherent. He named colored objects applied in each lateral field of vision. The papilledema had receded. The face showed asymmetry in static and dynamic action on the right side. His tongue deviated to the left when protruded. There was reduced perception of the big toe position on the left, and the deep tendon reflexes were increased in amplitude on the same side. On December 5, 1958, it was observed that the left homonymous visual fields were nonfunctional. The right face was still less mobile than the left. Occasionally the left leg indulged in spontaneous clonic activity. There was marked reaction to cold when applied over the entire left side of the body. This patient's picture drawing was symmetric, but the lines were dystaxic and perseverative. Despite the obviously different compositions of the 3 pictures, the mouthparts, eyelashes, eyes, and ear formations are similar in each production. The EEG had returned to an essentially normal type by the time of the third picture.

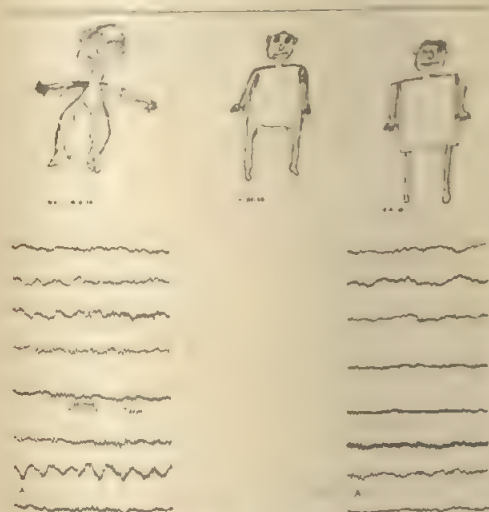


FIG. 9

DISTORTION ASSOCIATED WITH BRAIN ABSCESS (RIGHT TEMPORAL REGION). NOTE SIMILARITY OF FACE FEATURES.

Figure 9 is the production of a 35-year-old man who 3 months previously had a right mastoidectomy. He was oriented for time; no right-left confusion or disturbed space concepts were elicited. He yawned repeatedly and complained of a severe headache over the right eye and temporal region. The left eyeground showed papilledema with hemorrhage. The right pupil measured 4mm. and the left $3\frac{1}{2}$ mm. in diameter; they responded to light and in convergence. A tennis ball was called a "rubber

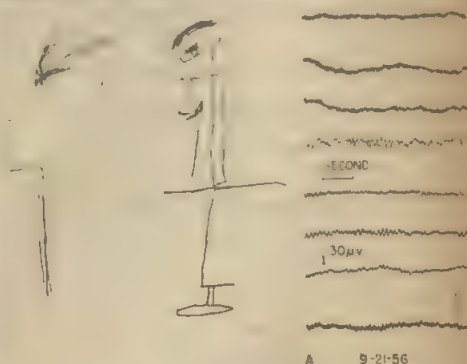


FIG. 10

DISTORTION IN PICTURE WITH LEFT HOMONYMOUS HEMI-INATTENTION.

Figure 10 was obtained from a 63-year-old man who awakened with clumsiness of the extremities of the left side on September 3, 1956. At no time was there headache. Speech was ideationally and mechanically adequate. There was no denial of illness. There was hemi-inattention in the left fields of vision with simultaneously applied objects in the temporal visual fields. He failed to resolve homolateral double simultaneously applied cutaneous stimuli on the left side. Position sense of the digits of the upper and lower extremities was disturbed. The maximal left-sided weakness of the extremities was in the proximal elements. Deep tendon reflexes were increased in amplitude over the left side. No Babinski signs were elicited.

The picture drawings showed a modified incomplete profile. The parts of the left visual field were omitted. Perseverative delineation was also evident. The EEG output was dominated by 6 and 7½ per second activity.

On January 30, 1959 the patient was again studied; he remembered his previous visit. He walked in a slow insecure way; there was a reduced amount of associated movement of the right upper extremity. He spoke rapidly, ap-

parently to retain the contextual thread. The left visual field inattention persisted as he occasionally was surprised to "see his left hand come into view." The picture production, Figure 11, is remarkably similar to that observed previously. The 7 per second activity of the EEG is somewhat more prevalent than in the earlier tracing.

In toxic states the distortions in the pictorial representations are general in distribution. The distortions may consist in varying degrees of combinations, of exaggeration of parts, grotesqueness of composition, of telescoping, or of perservation of the delineations.

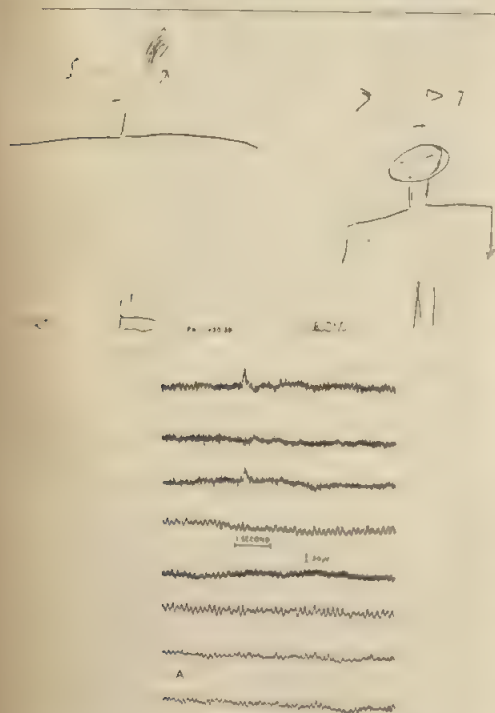


FIG. 11

SAME PATIENT AS IN PRECEDING FIGURE TWO YEARS AND FOUR MONTHS LATER. NOTE SIMILARITY OF DEPICTIONS.

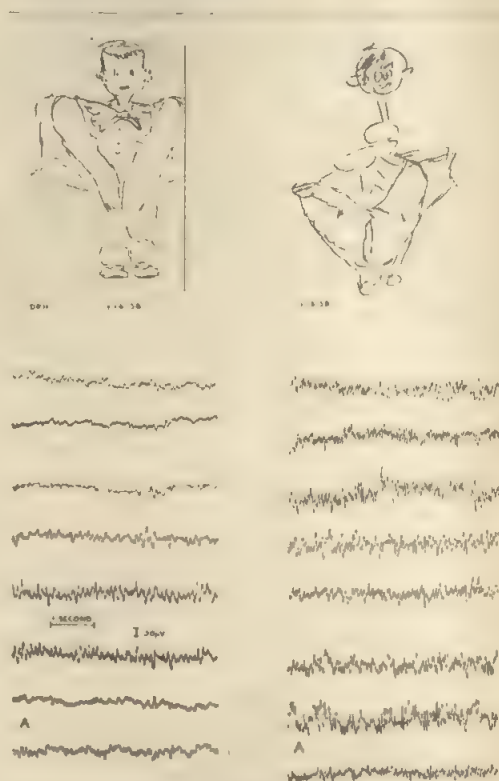


FIG. 12

SPONTANEOUS PICTURE (LEFT).
EFFECT OF ALCOHOLIC INTOXICATION (RIGHT).

Figure 12 was obtained from a 30-year-old officer who shortly after reporting for active duty had a witnessed grand mal seizure. On neurological examination no gross abnormalities were observed. His picture was of a stylized "angelic" type (left) but aside from failure to plan for the edge of the paper on the right the picture was symmetrical. The

picture on the right was obtained 2 days later after the patient had admitted in a mushy voice that he had been a "naughty boy while on liberty." The EEG was composed of 12 to 14 per second activity; Bogans test for alcohol was estimated as 1.5 mg./cc. of blood. His picture at this time, although similar in contour and design to the previous one, was poorly organized, disconnected, and linearly perserverative. Within 10 minutes after drawing the picture he became unaware of the environment. Corneal stimulation resulted in no responses; there was no withdrawal from pin prick or deep pressure.

In vascular lesions that do not involve the visual apparatus, the picture production shows a generalized distortion and simplicity of pattern (Figure 13, left).

There was a Babinski sign and hyperactive deep tendon reflexes on the right. His picture was formed from a stick figure with unusually applied digits. The EEG showed high voltage, 3 to 5 per second waves dominating the left brain output.

At the time of the drawing on the right of Figure 13, the patient was able to walk. When his speech became garbled he was now able to write his wants. He proved to be much more effective on this visit. Although his picture was better organized, he still utilized the transparency technique. The slow output of the EEG was much reduced in prominence.

From the data it appears that the picture drawing fluctuates between a second and higher order symbol as earlier defined. The picture produced, however, appears to be more of a higher order symbol than a pure representation. This derives from the fact that usually in only one or two elements of any given picture in this series, is a dominant characteristic of the individual portrayed. Also it appears that classical representation requires an innate compulsion to render, or reproduce, the object in a "perfect" form, or as an abstraction of the perfect form. The crudest drawing and the most acclaimed picture are symbols with but varying qualities of perfection of rendering.

SUMMARY AND CONCLUSION

My thesis is that the more related the replication is to the sense data, the lower is the order of symbolization. Consequently, irrespective of the complexity and meanings of the subject matter, as perfection in rendition is accomplished, the lower the order of symbol portrayed. In this sense the natural development of artistic forms is in non-representational geometric and surrealistic symbols. This logic induces a paradoxical situation. Are the scribbled delineations of the child, and anthropoids, high order symbols? Certainly the child's scribbles do not have representational value. This potential paradox is resolved when it can be demonstrated that the scribbling has very little, or no, *second order* symbol value to the child. This major point is elucidated by asking the child to point out, after the scribbling, even if he has named anatomical parts during the production, the various components. This is hardly ever accom-

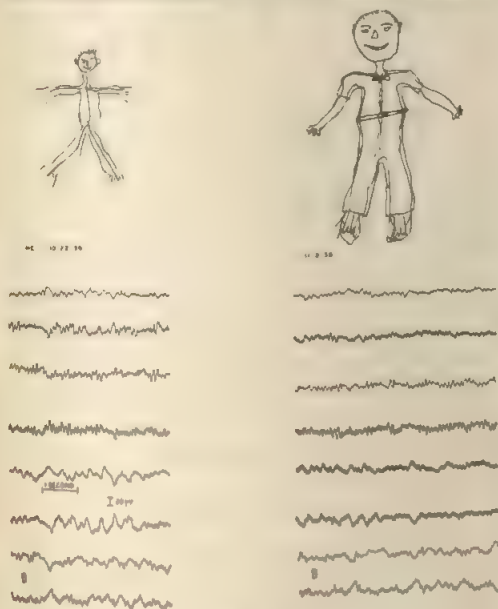


FIG. 13

ACUTE CEREBRAL VASCULAR ACCIDENT (LEFT).
MODERATE RECOVERY (RIGHT).

NOTE SKELETAL DESIGN IN EACH FIGURE.

An example is afforded by a 35-year-old man who had a sudden onset of right hemiparesis and a voluble jargon aphasia. There was difficulty in comprehending the written or spoken word. Only occasionally was a right-left confusion observed. Dynamically the right face was flat. In sensory function the major defects were in position sense, two-point discrimination, stereognosis and failure to resolve double simultaneously applied cutaneous stimuli.

plished correctly, even when there is only little time delay from the scribble to the interrogation. If the time delay is long and/or the picture rotated, the child cannot point out the body parts he has named in his scribbled display, but he can easily do this from a conventional two-dimensional manikin. As a consequence it appears that the scribble constitutes a mark without particulate, or general, symbolic value.

Further evidence that the picture drawing is an individual symbol of a person, and not necessarily a representation of the body image concept, is the fact that irrespective of the vicissitudes of brain function, in general, the major elements are faithfully reproduced, even when the composition is unilaterally or generally disturbed.

The specific, asymmetric distortions are a further point in favor of this concept. It seems very clear that these distortions when present are a manifestation of a disturbance in the instrumentalities; that is, the visual field is lost to the individual and consequently he displaces the elements in the blind field. A fruitful study might be the attempt to discover why some individuals with visual field defects do NOT portray asymmetric picture drawings.

It is of course, possible to discuss the presented data in the fabric of the *body image concept*, and its distortions. This, however, implies a one-to-one correspondence between the depictions and the body image concept. From my material, this direct correspondence is difficult to demonstrate. However, if material such as that comprising Figure 2 could be amplified and confirmed, the direct relation between body

image concept and depiction might be demonstrated. Irrespective, it is quite clear that the body image concept and the body depiction complex is not a process of physiological proprioception in the sense of spatial orientation of body parts. This derives from the fact that the blind child between the ages of 7 and 8 years (personal observations) is unable to present compositionally correct graphic or plastic forms of the human figure. As a consequence it appears that the graphically depicted human form is in high probability a visually learned and controlled symbol operation with only occasional perturbatory accretions emanating from volitional or non-volitional expressions of annoying parts or conflictual feelings. Consequently, a direct operational approach through symbols has been emphasized and employed in this study of the portrayal of the human figure.

In conclusion, it is shown that by means of learned processes, basic symbols are formed that appear to be a conservative expression of a person. An attempt has been made to demonstrate that this symbol fluctuates in a representational (second order) and non-representational (higher order) behavior matrix. And finally, that in the presence of crippling lesions of the brain, either of a transient, or more fixed type, that the symbol is either distorted in part or in a general manner, depending on the nature of the brain lesion.

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SUBLIMINAL AND SUPRALIMINAL INFLUENCES ON DREAMS¹

CHARLES FISHER, Ph.D., M.D.²

This paper will report an attempt to investigate the role of several types of incidental or indifferent perceptual stimuli in the formation of dreams and to elucidate some of the cognitive processes involved in the incorporation of such stimuli into the dreams. The recent work on subliminal registration, or more especially the replications and confirmations of the classical Poetzl experiment (1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 14, 15), has shown that subliminal stimuli are utilized in the formation of the manifest content of dreams. This work indicates that there are aspects of perception that are related to the drives, unconscious wishes and primary thought processes, and contrary to psychoanalytic and other theories, perception as an ego function is not exclusively concerned with adaptation and reality testing.

There is one important place in Freud's theoretical structure where he came close to dealing with perception in these latter terms and that is in his formulation of the nature and function of day residues (7). Although he did not discuss day residues in relation to perception, he did stress the significance of *transient, unnoticed* or vaguely attended to impressions of the day in the construction of dreams. He came to the conclusion that dreams have a preference for taking up *unimportant details* of waking life. The wider implications of Freud's astute observation have recently begun to be recognized and are leading to the investigation of the influence of indifferent impressions, not only on the thought processes of altered states of consciousness, such as the dream or hallucination, but also on thought in the waking state.

When speaking of day residues, Freud freely intermingled the terms, trains of

thought, impression, experience, day memory, etc. He did not distinguish between these various mental processes and the external perceptual events that accompany them. It has been proposed that the concept of the day residue needs to be expanded to include not only preconscious trains of thought, ideas, memories, etc., but also the sensory events that surround these psychic events and, for purposes of dream formation, especially the subliminal stimuli that are registered while they are going on. It is the sensory material, both preconscious and conscious, that is registered as memory trace, that appears to become the raw material for the dream and is utilized in the process of translation of the dream thoughts into plastic visual or other sensory images.

What exactly did Freud mean by an indifferent impression? He stated,

The unconscious prefers to weave its connections around preconscious impressions and ideas which are either indifferent and have thus had no attention paid to them, or have been rejected and have thus had attention promptly withdrawn from them (7).

Although Freud spoke of indifferent impressions as those to which no attention had been paid or from which attention was quickly withdrawn, he never clearly distinguished between impressions which reached awareness and those which remained entirely out of consciousness. Most of the types of impressions, experiences, trains of thought, etc., that he spoke about were consciously experienced, however fleetingly. Freud did not further pursue the leads suggested by his off-hand remarks about indifferent impressions nor consider the possibility that different kinds of incidental registrations might have different roles in the formation of dreams.

The following is a tentative classification of incidental registrations. First, there is the totally subliminal, incapable of entering consciousness by virtue of weak stimulus conditions. With this type there is no question of attention being involved because no amount of attention will bring about aware-

¹ Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

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ness; nevertheless, registration and formation of a preconscious memory trace are assumed to take place. Second, there are percepts which are capable of entering consciousness but do not do so because attention is not paid to them. Third, there are incidental impressions that reach consciousness fleetingly, that are weakly cathected with attention or from which cathexis is quickly withdrawn. Fourth, there are supraliminal, focal, fully cathected perceptions which fall within the central focus of attention. Such supraliminal, focal percepts may or may not be indifferent, depending upon their meaning, intensity of affective charge and other conditions.

The completely subliminal stimulus may be considered an extreme example of what Freud called "an indifferent impression." Although the completely subliminal stimulus has been extensively investigated, the role of the supraliminal, focal stimulus in dream formation has not.

As I have stated, the present pilot investigation represents an attempt to study several of the types of visual registrations and percepts associated with day residues and to differentiate their respective roles in the formation of dreams. Specifically, the attempt was made to study the effect of the simultaneous presentation of a subliminal stimulus and a supraliminal, focal stimulus on subsequent dreams.

METHOD

Two visual stimuli (Fig. 1) were exposed

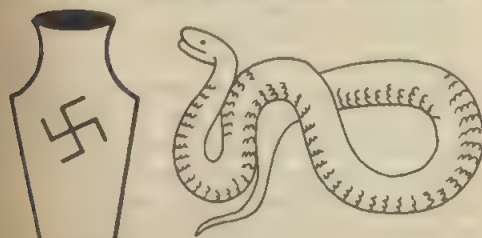


FIG. 1

supraliminal by drawing it in very heavy inked lines. For 4 subjects, the reverse procedure was carried out; that is, the vase and swastika were made subliminal and the snake was made supraliminal. When either version of this slide is tachistoscopically exposed at 1/100 second, the subliminal stimulus cannot be discriminated, the recognition threshold for it being about $\frac{1}{2}$ second. The supraliminal stimulus, however, is normally discriminated after one or two exposures at 1/100 second. It was assumed that the 2 stimuli become part of the sensory events incorporated into and forming a part of the complex experience we call a day residue.

The essential method used was the combined dream-imagery technique previously described (4). Briefly, the stimulus picture was exposed for 1/100 second at successive intervals until the vase, and particularly the swastika upon it, was successfully discriminated. After each exposure, the subject was required to draw what he had seen and to describe it verbally. The subject was then requested to bring in any dreams that he had during the night. The next day he reported his dream, made drawings of its significant pictorial elements, and then associated to the dream as freely as he was able. Following this, the stimulus picture was exposed for 1/100 second again and a series of 5 or more free images elicited. The subjects verbally described and made drawings of them. The stimulus was then re-exposed at successive intervals starting at 1/100 second, gradually increasing the time of exposure until the threshold of discrimination for the snake was determined. Finally, the subject re-examined his drawings for similarities to and correspondences with the stimulus picture.

It will be noted that both of these stimuli carry a highly affective charge and that they are sexual symbols in the psychoanalytic sense. The swastika on the vase could be thought of as an American Indian decoration but I was aware of the possibility that it remains for most people a highly charged configuration.

Of the 11 subjects used, 8, all male, were residents or other physicians of the experimenter's acquaintance; 2 were female patients on the Psychiatry Ward of Mount

simultaneously through a tachistoscope. For 7 subjects, the stimulus picture shown on the right was made totally subliminal by drawing it in very light pencil lines while the stimulus picture on the left was made

Sinai Hospital, and one was a paid subject, by profession an actor.

RESULTS

I shall first present 2 dreams which occurred following the tachistoscopic exposure of the slide in which the vase was supraliminal and the snake subliminal.

Subject A had the following dream :

I was in a totalitarian prison camp in a room which they were trying to wire so they could listen in. There was a red-headed guy sitting in a chair. His name was Fisher. His arms were bare ; they were shortish and bound down on the arms of the chair with Scotch tape. He did not seem too frightened. From his elbows to his hands, his arms were not as long as they should be. I said to him, "I'm resigning tomorrow from the concentration camp. Now I'm going to take my bullwhip," and I made a threatening gesture at him.

Associations : The Fisher in the dream was not you but an old friend of mine. I liked him because he was broad minded, and racially tolerant. Fisher's hands were not right. All that it took to hold his arms down was Scotch tape because they were so weak. I used to Scotch tape my own fingers together and then try to break loose in order to test my strength. The whole dream gives me a feeling of idiocy. I never in my life held a bullwhip. It was like acting in a play, as though Fisher knew that I was not threatening him ; he did not appear frightened.

The subject made a drawing (Fig. 2) depicting himself threatening Fisher with the bullwhip. His image of himself was one of power and strength, as indicated by the very



FIG. 2

large biceps on the arm holding the bullwhip. He remarked that "the bullwhip had very coils, was black and made of some kind of living stuff like catgut. I think it's made of snake hide. I've seen rattlesnakes of that consistency."

His associations to the remark "I am resigning tomorrow from the concentration camp," were as follows. The phrase "concentration camp" was a play on words related to the idea that I forced him to *concentrate* on the screen, and on his dreams. The idea of resigning had to do with his resentment at being in the position of a subject and his irritation at being forced to dream. The bed that was wired for listening in was associated to his fear of being forced to reveal his thoughts, and made him think of Orwell's "1984" and Big Brother. He stated that the Fisher in the dream must represent me.

During the re-exposure period, the subject compared his dream drawings with the stimulus picture. The subject felt that the concentration camp setting of the dream had been evoked by the swastika. He was extremely impressed by the resemblance between the bullwhip and the snake and by the fact that he had described the whip as made out of snake hide.

Interpretation : The latent content of the dream centers around the subject's unconscious conflicts having to do with the idea that he is weak or in a weak position by virtue of his status as an experimental subject and that I am strong and will dominate over him, force him to concentrate, to dream and to reveal his secret thoughts.

The dream expresses his aggressive wishes to reverse roles, to be in the strong dominating position and to place me in a submissive, weak one. The swastika stimulated a train of preconscious dream thought having to do with a concentration camp, representing his unconscious picture of the laboratory and the hospital. The central part of the dream relates to the red-headed man named Fisher, an extremely thin disguise for me, whom the subject threatens with a bullwhip. The idea of resigning expresses the subject's wish to run away from his role as a subject. It seems obvious that the subliminal percept of the snake was transformed in the dream into the bullwhip made of snake hide. The idea of strength and weakness and domination and submission is depicted in the description of the arms of both parties to the conflict. Fisher's

arms were weak and deformed, bound down with Scotch tape, while the image of the subject was that of a powerful figure with bulging biceps and the threatening bullwhip. Although the subject's aggression in the dream is quite apparent, it is disguised and toned down by his giving the dream scene a play quality, by making Fisher appear not to be frightened, by tying his arms down with Scotch tape that can easily be broken.

Following exposure of the same stimulus, Subject B had a dream in which the subliminal snake appeared to be transformed in the manifest content of the dream into the arm and hand of a man. The drawing of this image is shown in Fig. 3. During the re-exposure period,

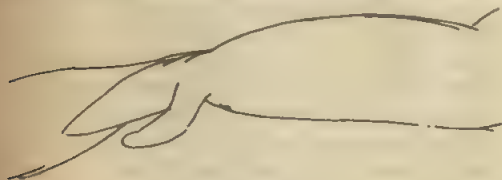


FIG. 3

the subject stated that the hand and arm on the right resembled the snake's head and proximal part of the body and he called attention especially to the correspondence between the thumb and the lower jaw of the snake. The analysis of the dream suggested that the arm and hand had symbolic phallic meaning and had assumed some of the pictorial characteristics of the snake. In the content of this dream, there were direct references to Jewishness and anti-Semitism.



FIG. 4

It has been noted that Subject B gave evidence of symbolic phallic displacement to the arm and hand. This tendency to displace to the extremities was shown even more clearly in a free imagery experiment done subsequent to the dream experiment, utilizing the same stimulus at a time when the subject did not yet know the nature of the stimulus.

Fig. 4 was the subject's first image, showing one of the 40 thieves of Ali Baba hiding in a jug. Later, during the re-exposure period, the subject felt that the coils of the turban were transformations of the coils of the snake.

The second image (Fig. 5) was described



FIG. 5

as an amphora with smoke coming out. The smoke became transformed into a genie. Note the sinuous, snake-like structure of the smoke. The subject stated that this image reminded



FIG. 6

him of a mermaid which he used to draw a lot.

Fig. 6 represents his image of the mermaid. He noted particularly the mermaid's scales,



FIG. 7

which made him think of a snake, and he made the drawing shown in Fig. 7. He said that he used to make a lot of anti-Nazi drawings and this reminded him of a political cartoon. A snake is shown crawling through the vase, representing Europe, and bursting through its base. On the snake's head is a swastika. The cartoon illustrates the rape of Europe by the Nazis.

In this experiment, we see the gradual striking emergence of the percept of the snake, beginning with the coils of the turban in the first image, the sinuous, snake-like formation of the smoke in the second, the mermaid's scaly tail in the third, and finally, the almost photographic emergence of the snake in the last image. Aside from the breakthrough of the percept in this final image, the snake never appeared as such in the images or the dream, but was displaced and distorted in disguised ways to either the arms or the legs.

The following generalizations can be made about these 2 experiments:

1. In both, the subliminal snake did not appear as such in the dreams but was transformed, in the first instance into the bullwhip made of snake hide and in the second into the arm and hand. In both instances, the transformed image took on formal, pictorial properties of the stimulus picture; for example, the shape and composition of the bullwhip, and the formation of the hand which resembled the snake's head. Finally, in both dreams, the subliminal snake appears to have become associated with the most significant, most deeply repressed drive, wish-fulfilling aspect of the latent content of the dream.

2. In contrast, part of the supraliminal stimulus, namely, the swastika, did not ap-

pear in the dreams in *image* form as did the subliminal snake, but in both instances activated preconscious trains of thought. In the first dream, these related to a concentration camp, to ideas of force, Big Brother, being spied upon, etc.; in the second dream, to trains of thought relating to Jews, such as a verbal comment about anti-Semitism.

3. Although the transference aspects of the dream stimulated by the experimental situation are important factors in explaining the sexual and domination-submission themes, it was entirely possible that such content was reinforced by the nature of the two stimuli, namely, their meanings as male and female symbols. That such was the case is suggested by the data of the imagery experiment reported. Here, the symbolic sexual meaning of the vase and the snake appear to have been unconsciously cognized, the final image becoming a metaphorical representation of, "the rape of Europe."

The following dream was elicited after the exposure of the *reversed* stimuli, i.e., in this instance the snake was supraliminal and the vase and swastika were subliminal.

Subject C dreamed:

I was at a dance in a very large hall. I found an object on the floor. It was either a brooch or a small antique. Dr. A was with me. As I was looking at the brooch, little mites came out of it and embedded themselves in the skin of my fingers and I became quite frightened. Wherever I would touch my hand these mites would embed themselves in my skin.

Associations: The dream was concerned with a fantasy punishment for forbidden sexual activities. The brooch appeared to be a female symbol and the mites that came out of it were associated with ideas of phallic contamination or injury as punishment for his sexual activities, with displacement to the fingers. This displacement was activated by the fact that the subject had recently developed a severe contact dermatitis on his fingers.

Fig. 8 shows on the left, the subject's drawing of the brooch. It appears to be a distorted,



FIG. 8

flattened out transformation of the vase. If the brooch were stretched out and down it would very closely approximate the outline of the vase which I have superimposed in dotted lines upon it.

The drawing on the right represents one of the mites. Although it does not bear too striking a resemblance to the swastika, it does contain some of its formal elements and may have been derived from it.

The subject made another drawing (Fig. 9)



FIG. 9

showing his hand with markings indicating the embedding mites. The markings on the middle finger contain clear-cut elements of the subliminal swastika, supporting the contention that the fleas represent a transformation and distortion of the subliminal stimulus.

In this experiment, the subliminal vase and swastika seem to have appeared in the manifest content of the dream in image form and associated with the repressed, drive organized, wish-fulfilling aspect of the dream in the same manner as the subliminal snake did in the first 2 experiments described. However, the supraliminal snake did not appear to bring about the same effects as the vase and swastika in the first two experiments when they were supraliminal. As a matter of fact, there was no indication of the presence of the snake either directly or in disguised or distorted form in the manifest content of the dream. It is possible, however, that it influenced the dream indirectly and by virtue of its symbolic meaning had something to do with the latent sexual content of the dream.

After the exposure of the supraliminal

snake and the subliminal vase, Subject D had a dream which dealt with a Negro and involved anti-racial material. There is no evidence in the dream of the appearance of the swastika in image form. Instead, it seems to have activated preconscious trains of thought relating to racial matters in much the same way as it did when the stimulus was made supraliminal.

A somewhat different utilization of the subliminal swastika was shown in the results of 2 other subjects who were exposed to the reversed slide.

Subject E dreamed :

I was on the 40th floor of some building and was very scared of being up there. It did not seem as safe as the ordinary 40th floor of a building.

After reporting the dream, the subject wrote the words, "fourtieth floor" as shown in Fig. 10. It will be noted that both the words "four-



40th floor
fourtieth floor

SEAT 44

FIG. 10

tieth" and "flour" were misspelled. By this misspelling, both the words were made to contain the word, "four." During the re-exposure period, the subject himself spontaneously pointed out that the swastika is made up of 4's as indicated in the figure.

Part of a second dream went as follows : "Several of us were going to a legitimate theatre. I had Seat 44." Again, during the re-exposure, the subject felt that the 44 was derived from the swastika.

Subject F also transformed the subliminal swastika into "fours" in 2 dreams. One was about a shabby clock with "a 4 o'clock look." In these instances, the 4's represented transformations of the swastika.

As I have noted, in the dreams so far reported, when the snake was made *supraliminal*, there was no evidence of its emer-

gence in either primary or secondary process form in the manifest content of the dream. However, in 2 of the dreams of Subject E, indirect evidence of the influence of the supraliminal stimulus could be detected. The subject had the following dream :

"There was a group of people standing around a guy who was going to open a *wall safe* and when he opened it *secrets* would come out. Everything that had been built up would be destroyed like the scandal in Connecticut where 6 men raped a teen-age girl and the mayor of the town committed suicide. They were all around for the opening. Then I was running out of the building, making a mad dash." The rest of the dream had to do with the subject's breaking into an old New England house, being pursued by and hiding from some man who was after him.

Associations : The old New England house made the subject think of his grandparents' farm house where he used to spend his summers when he was a small child. One summer when he was about 5, his uncles were cleaning out a well and killing snakes that were in it. One of them picked up a snake and threw it at him. He screamed and ran into the house. Ever since this traumatic experience, the subject has had an intense fear of snakes.

Interpretation : The evidence suggested that the group of people standing around waiting to open the wall safe and let the secrets come out was an indirect representation of the memory of his uncle removing snakes from the well and throwing one at him. The running away in a mad dash in the dream related to his running to the house in terror when his uncle threw the snake at him. It is of interest also that the "secrets" that were to come out of the well were associated with the scandal in Connecticut where 6 men committed rape on a teen-age girl. The subject's memory of his uncle and the snake was a perfectly conscious one, but was, in psychoanalytic terminology, a screen memory, that is, it screened a repressed group of fantasies that connected with his homosexual fears and wishes relating to the uncle. It may be noted that this subject had overt homosexual tendencies.

DISCUSSION

The results of the experiments reported confirm and extend Freud's formulations about the nature and function of indifferent impressions in dream formation. They can best be understood in terms of certain psychoanalytic propositions about the structure

of memory organization. Rapaport (13), has suggested that memory schema are organized into constellations layered in depth. The deepest level of repressed memories are organized around drives and have the quality of unconsciousness. This drive organization of memories is distinguished from a more superficial constellation, in terms of depth, which can be called the "conceptual organization of memories." This latter organization carries the quality of preconsciousness and is readily capable of becoming conscious. The drive organization of memories functions with mobile cathexes and primary process thought mechanisms, whereas the conceptual organization utilizes neutralized energy and functions according to the secondary process. Between the drive and conceptual organizations of memory it is assumed that there are transitional constellations which partake of the properties of both organizations.

The manner in which the perceptual stimuli were incorporated into the dreams in these experiments was highly complex and appeared to involve a number of factors. I initially thought that the subliminal stimulus resonated with the drive organizations of repressed memories, was subjected to primary process transformation and appeared in the manifest content of the dream in image form in relation to the latent unconscious wish fulfilling aspect of the dream, whereas the supraliminal stimulus appeared to activate preconscious trains of secondary process thought, direct derivatives of the stimulus emerging in the dream in verbal, conceptual form. This formulation turned out to be only partially correct and a good many exceptions to it developed. At least 3, and probably more factors influence the manner in which the stimuli are handled by the dream work : 1) The degree of indifference of the stimulus, *i.e.*, whether it is subliminal or supraliminal ; 2) the meaning content of the stimulus ; and 3) the personality characteristics, conflicts and defensive operations of the subject.

1. *The role of the degree of indifference of the stimulus*. A stimulus, such as the swastika, when made supraliminal, generally becomes registered as memory trace in the conceptual organization of memory. There, it activates preconscious trains of thought

which are expressed in secondary process forms, namely, in verbal forms, as opposed to representations in the visual images. It appears to be a recruited to reality attuned memory.

It is expressed in rational thought, and, therefore, is less suitable for use in expressing the drive, and unconscious, wish-fulfilling aspect of the dream. Thus, there appeared in the manifest content of the dream, direct derivatives of the swastika having to do with Nazis, concentration camps, prison barracks, Jew-Gentile, and other racial conflicts. These derivatives were logical and direct and of the same kind that one might have in the waking state.

In the majority of the experiments, both the snake and the vase and swastika, when made subliminal, appeared to resonate with the drive organization of memories, were more readily cathected by mobile id energies and unconscious wishes and more subject to primary process transformation.

As opposed to the supraliminal focal stimulus, they appeared in the dream as indirect derivatives and in the form of visual images. Thus, the transformed image of the subliminal snake was used in the direct representation of a wish fulfillment as in the dream of the snake-like bullwhip. In the case of Subject C, the subliminal vase and swastika were transformed into the brooch and the embedding mites. Such derivatives of these stimuli are not of the kind that would ordinarily develop in the conscious waking state.

Although the stimuli, when made subliminal, behaved for the most part as I have indicated, there were exceptions. The subliminal stimulus may be recruited either into the drive or conceptual organization of memories or into constellations that partake of both organizations. At the most primitive level, a fragmented derivative of the memory trace of the subliminal stimulus may appear in image form in the dream. In these instances, some formal pictorial or geometrical element of the stimulus will emerge divorced from the original meaning of the stimulus with a new meaning assigned. A good example would be the dream reported in which the swastika was transformed into the number 4, or the dream in which it emerged as the embedding mites.

On a somewhat more complex level, the subliminal snake may appear in image form, the image modelled on the formal properties of the stimulus, but with certain conceptual elements added, for example, the bullwhip which had the shape of a snake but was said to be made of snake hide. The emergence of such an image implies some unconscious process of cognition so that the subliminal snake was recognized for what it was. At a still more complex level the subliminal stimulus may activate the conceptual organization of memories with the emergence of direct secondary process forms of thought; for example, the dream about the Negro. In this instance, we have to assume that unconscious recognition of the meaning of the swastika took place and that associated secondary process derivatives relating to racial conflicts appeared in the dream.

2. *The role of the meaning content of the stimulus.* In the dreams of the 4 subjects who were exposed to the supraliminal focal snake it became clear that the latter did not behave in the same way as the swastika when it was supraliminal. That is, it did not appear to have activated pre-conscious trains of secondary process thought. As a matter of fact, there was no evidence that it found direct representation in the manifest content of the dream in any form. *It seemed that the fact that the stimulus was a snake was more important than the fact of its being supra- or subliminal.* Since the snake is a highly charged phallic symbol, it is suitable to resonate with the drive organization of memories and latent unconscious wishes. There was, however, evidence in several of the dreams of Subject E that it did play a significant role in stimulating their latent content, although its influence was complex and indirect. It appears to have aroused certain conscious screen memories, the latent content of these screen memories then being indirectly, in a disguised and distorted form, represented in the dream. The traumatic screen memory concerned with snakes attained representation in one dream in the form of the wall safe and the secrets.

To summarize the rather conflicting da-

ta that I have described : In all the experiments, the swastika when made supraliminal, if it influenced the dream, did so by activating the conceptual organization of memory and appeared in secondary process form, never in primary process image form. When made subliminal, the swastika in some instances activated the drive organization of memories and in some, the conceptual organization. The snake, on the other hand, when made subliminal, always appeared to activate the drive organization of memories. When it was made supraliminal, however, it did not appear to activate the conceptual organization of memories. It did not find direct representation in the manifest dream either in verbal or pictorial form, but when it did influence the dream did so in a highly indirect manner, as in the instance of the activation of a screen memory.

3. *The role of personality characteristics, conflicts and defensive operations of the subject* : No systematic attempt has been made to investigate these factors but individual variations probably play a significant role, as Shevrin and Luborsky have recently demonstrated in their investigation of variations in the utilization of the defense mechanism of repression, and the influence of such individual differences on the results of the Poetzl experiment(15). The specific conflicts of the subject may also influence the manner in which various types of perceptual stimuli are utilized. For example, Subject E's reaction to the supraliminal snake may well have had something to do with the fact that he actually had a phobia for snakes.

CONCLUSION

This is a preliminary, exploratory, pilot investigation and the data have not been evaluated by objective methods. Although

it would be difficult to do this, we plan to make the attempt.

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DIFFERENTIAL RESPONSES IN YOUNG VS. OLD ANIMALS TO TRAINING, CONFLICT, DRUGS AND BRAIN LESIONS

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PRELIMINARY OBSERVATIONS

One female and 5 male kittens, 4 to 5 months old, and 1 male and 5 female rhesus monkeys, aged about 2 years, were put daily for 8 to 12 months as to their individual and social behavior, their capacities for solving problems of discrimination and short term memory presented in a specially designed apparatus, and their reactions to depressant and ataractic drugs. Our methods and apparatus were described in detail in previous reports (1, 2). In the present study, the animals were required to press the correct one of two levers in response to bell or light signals, to alternate between levers when no signal was given, and then to combine these patterns of response. In addition, the monkeys were required to discriminate direct object stimuli, delayed spatial cues, and pattern relationships in a modification of the Wisconsin General Testing Apparatus (3). The criteria and scales employed had been proved to be highly reliable in earlier studies (1).

Induction of Experimental Neuroses. As described previously (2), this was accomplished by subjecting the animals at irregular periods to 2 to 10 low-amperage high-voltage condenser shocks at the time of food taking over a period of 3 to 15 weeks.

Cerebral Lesions. The neurotic kittens were observed for 11 to 13 months and the monkeys for 14 to 18 months, after which all of the animals were operated to produce the following bilateral lesions: in cats, 4 medial amygdalectomies and 2 mediodorsal thalamic ablations; in the monkeys, 3

total amygdalectomies, 2 frontal (Crantham equivalent) and 1 temporal ablations. The thalamic lesions were produced by Horsley-Clarke stereotactic electrolysis; the others, by open field operations.

RESULTS

Spontaneous Behavior. As can be seen from Table 1, the kittens took longer than older cats to achieve comparable ratings in establishing friendly relations with the experimenters, exploring the laboratory, feeding in the experimental apparatus, and trying the levers for activating conditional signals and securing the food rewards. In contrast, the adaptation of the young monkeys was approximately as rapid as that of the older pre-adolescent and adult animals when rated on comparable scales.

Lever Pressing. Table 1 indicates that the kittens took almost 5 times as long as older cats (average 110 days as compared to 21) to learn to press levers for food rewards 25 times in a 40-minute period. Similarly, the 6 young monkeys took an average of 66.5 days as opposed to means of 19 and 22.5 days for the older control groups.

Discrimination. Table 1 also shows that the young cats (a) took almost 3 times as long to acquire the initial auditory-visual differential responses and (b) performed with an accuracy of only 60% as opposed to the 80% or better of the older cats. The young monkeys also learned such discriminations more slowly than did adult monkeys (18 as opposed to 15 days) but about as well as the pre-adolescents. All three groups performed with comparable accuracy.

Neuroses. As the experimental neurosis generalized, all animals developed hyper-reactivity to stimuli, tics, tremors, generalized phobias, disruptions of learned performance, resistance to being brought to the laboratory and, in the monkeys, digestive,

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TABLE I

DAYS REQUIRED FOR ADAPTATION TO LABORATORY ROUTINE, CONSISTENT
LEVER PRESSING BEHAVIOR AND LEARNING

Subjects	Adaptation to laboratory routine	Consistent Pressing of Levers *	Learning **	
			Days	Average Percentage of Learning
Adult Cats n=65	Range 5-40 Mean 12	Range 1-70 Mean 21	Range 5-45 Mean 20	80% or better
Kittens n=9	Range 20-70 Mean 44	Range 20-180 Mean 110	Range 10-90 Mean 55	60%
Post-Adolescent Monkeys n=35	Range 5-30 Mean 11	Range 1-35 Mean 19	Range 5-30 Mean 15	80% or better
Pre-Adolescent Monkeys (Est. 32-33 mos.) n=13	Range 5-30 Mean 10.5	Range 1-40 Mean 22.5	Range 5-40 Mean 19	60% or better
Pre-Adolescent Monkeys (Est. 24 mos.) n=6	Range 5-30 Mean 11	Range 20-90 Mean 66.5	Range 5-35 Mean 18	80% or better

* Days between the initial lever-press (required movement less than 10 inch under pressure of less than 1 ounce) for a food reward to correct manipulation of both levers 25 times within 10 minutes. No discrimination is involved in this step.

** For simplicity, only the discrimination between bell and light signals is included here.

respiratory and other dysfunctions which persisted despite 7 to 17 months of retraining. However, in contrast to the adults of both species, the young animals continued to take food in the apparatus if it were made freely available and showed only mild inhibitions of their usual play and social behavior; moreover, the monkeys in particular retained their capacity to master discrimination techniques in a different apparatus.

Effects of Brain Lesions. Soon after amygdalectomy and until they were sacrificed 16 to 18 months later our kittens pursued other animals, regardless of sex, species or opposition, and persisted in mounting them for as long as two hours if permitted to do so; in contrast, this hypereroticism generally disappeared within 6 to 8 months in a control group of adult amygdalectomized cats(4). The 4 young monkeys with amygdaloid or temporal ablations were similarly hypererotic, whereas those with frontal ablations were more diffusely overactive.

However, in none of the young animals did the cerebral lesions immediately modify any established neurotic pattern; indeed, only after more than a year of intensive postoperative retraining was a modest decrease in hyper-reactivity and increased adaptation to the experimental apparatus effected. During the subsequent 13 to 16 months the young monkeys showed a reduction in startle and phobic responses, lessened hyper-reactivity, and a moderate increase of social interactions with their cage and colony mates; nevertheless, stereotyped motor behavior and apprehension in the experimental apparatus persisted, and the animals failed to relearn problems they had previously mastered.

Effects of Drugs. Reserpine in daily doses of .05 to .15 mg. and chlorpromazine in daily doses of 18 to 30 mg. were administered to our neurotic animals before and after operation. Neither drug produced more than a minimal and transient diminution in neurotic behavior in the kittens,

whereas somewhat marked and persistent benefits had been observed in 12 of 36 adult animals (1). Both young and old monkeys were even less amenable to drug therapy than were the cats.

CONCLUSIONS

A preliminary study of 6 kittens and 6 rhesus monkeys, approximately two years old, indicated that:

1. The kittens as compared to older cats adapted less well to laboratory routine and learned tasks of lever-pressing and audio-visual discrimination more slowly;

2. The young monkeys adapted to laboratory routine as well as the older ones but took more time to master the lever-pressing; on the other hand, they learned a series of discrimination problems as quickly as did older pre-adolescents though again somewhat more slowly than adults;

3. The young animals readily developed neurotic patterns under the stress of adaptive conflict but these reactions, though

resistant to 7 to 17 months of retraining, were much less generalized than those in adult controls;

4. Lesions in the amygdaloid and frontal areas induced heightened sexuality and general activity level respectively, but, despite 16 to 25 months of postoperative retraining, there was no (in cats) or little (in monkeys) amelioration of neurotic patterns in the young as compared with older animals;

5. Reserpine and chlorpromazine also produced only minimal and transient effects on the experimentally induced neurotic behavior.

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RAPID URINE COLOR TEST FOR IMIPRAMINE (TOFRANIL, GEIGY)

Mix 1 cc urine with 1 cc test solution*, shake gently and read promptly against color chart:

Daily Drug Dose:

25-50 mg.

50-75 mg.

75-150 mg.

150-250 mg.



+



++



+++



++++

*Test solution consists of :
25 parts 0.2% potassium dichromate solution
25 parts 30% sulfuric acid
25 parts 20% perchloric acid
25 parts 50% nitric acid

Absence of green color indicates a negative test.

Initially purple color, rapidly fading and followed by green color development means simultaneous presence of some phenothiazine drugs and Tofranil.

In the presence of large amounts of phenothiazine drugs, a more persistent purple reaction may be seen. In this case add one more cc of test solution, or perform the test immediately with 1 cc of urine and 2 cc of test solution for reliable demonstration of Tofranil.

CLINICAL NOTES

A RAPID URINE COLOR TEST FOR IMIPRAMINE (TOFRANIL, GEIGY) : SUPPLEMENTARY REPORT WITH COLOR CHART

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In a recent report on a new reagent for the demonstration of urinary imipramine (1), we emphasized the importance of an objective test for actual drug intake, especially in the case of depressive patients who are frequently reluctant to ingest any type of medication.

The inexpensive test solution which may be prepared by any hospital pharmacy or laboratory, consists of the following:
25 parts 0.2% potassium dichromate solution
25 parts 30% sulfuric acid (by volume)
25 parts 20% perchloric acid (commercial product)
25 parts 50% nitric acid (by volume).

The test is performed by placing 1 cc of urine in a test tube, adding 1 cc of test solution, shaking gently to obtain a homogeneous mixture, and reading immediately against the color chart. Prompt readings are especially necessary in the lowest dosage range (25-50 mg. Tofranil daily) since the resulting pale olive color is of limited stability (15-25 seconds); higher drug doses yield color complexes of increased stability and color intensity, persisting for more than 60 seconds at the highest dosage level seen (250 mg. per day).

The color chart was compiled from over 1000 urine specimens containing Tofranil, alone or in combination with other drugs. Approximately 250 determinations were used for each of the 4 dosage ranges. Each level of the chart represents the average reactions of at least 25 patients tested repeatedly on different days. The 4 color intensities of the chart comprise the pale olive (+) level, corresponding to daily drug doses of 25 to 50 mg., the light green (++) level for doses of 50 to 75 mg., the medium green (+++) level for 75 to 150 mg., and

the deep emerald green (++++) level for daily drug doses of 150 to 250 mg. The latter dose was the highest one seen in our laboratory.

Absence of green color indicates a negative test. In all urine specimens containing Tofranil, alone or in combination with other drugs, not a single false negative test was observed. As reported previously(1), urines containing imipramine and phenothiazine drugs simultaneously, will show an initial purple color reaction which fades rapidly and is followed by the characteristic green Tofranil reaction. This is true for ratios of imipramine to phenothiazine compounds up to about 1:5, and for daily phenothiazine drug doses up to about 500 mg. In the presence of relatively high doses of phenothiazine compounds, e.g. in a combination of 50 mg. imipramine with 600 mg. chlorpromazine daily, the initial purple color may not fade within the usual 15 seconds and may camouflage the Tofranil reaction. In the presence of even higher amounts of phenothiazine drugs, actually all of the active color producing components of the reagent may be exhausted in the reaction with the phenothiazine compound. It is therefore advisable to perform the test in all these instances with 1 cc of urine and 2 cc of test solution to avoid any false negatives. This should be made standard procedure in the presence of daily phenothiazine drug doses of 400 mg. or more.

In 300 control urines free of drugs no false positive tests were encountered. In another series of 300 controls, containing all types of drugs with the exception of imipramine, 4 patients receiving large doses of multiple antitubercular medications showed "trace" reactions, i.e. false positive tests, somewhat below the (+) pale olive level of the color chart. This was found especially at peak excretion time of paraamin-

¹ Respectively: Research Biochemist, Chief, Acute Service, and Director, Professional Services, V. A. Hospital, Brockton, Mass

and color of 1 to 3 hours after administration of the reagent. These reactions differed from the low level. Later reactions by exposure with the reagent were usually 20 to 40 seconds after addition of the reagent to the urine. In a previous study¹ of patients treated with up to concentrations of 1 mg. IAS per ml. in 2 per cent of water showed no reaction with the Tofranil reagent in vitro, but higher concentrations (e.g. 10 mg. per cc.) yielded a greenish color similar to the (+) level of the chart after 20 seconds. A small series of phenylketonuric urines² which yielded false positive tests with a number of phenothiazine test reagents (2-5) did not yield any false positive, i.e. green color reactions, with the Tofranil reagent, although test colors from orange to pink and purple were seen in these cases. In no instance among the 135 false positives encountered in the 300 control urines containing a variety of drugs, did the false posi-

tive reactions reach the (++) or higher levels of the chart. In view of this, the possibility of misinterpretations seems rather remote.

It was also found that the Tofranil reagent could detect decreasing amounts of imipramine and/or metabolites for several days after discontinuation of the drug. In these cases an original (++) level, for instance, was found to drop to the (+) level within one or two days, with traces detectable for several days thereafter. An investigation of the urinary excretion pattern of the drug and the nature of its biological and chemically prepared metabolites is currently in progress.

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REVERSIBILITY OF DRUG-INDUCED PARKINSONISM

ROBERT B. CAHAN, M.D., AND DAVID D. PARRISH, M.D.¹

Symptoms of parkinsonism induced by Thorazine and Serpasil did not return in a majority of tested hospitalized patients after their anti-parkinson drugs were discontinued. Cogentin had been used from 3 to 16 months for symptoms of parkinsonism induced by Thorazine or Serpasil. In preparation for a proposed study of a new anti-parkinson agent, 34 patients had their Cogentin discontinued, remaining on their previously parkinsonizing dose of ataraxic. After 3 weeks only 6 patients had any return of their parkinsonism! After 8 months, none of the other 28 patients had developed parkinsonism. Perusal of the literature in order to ascertain whether this observation had been made and reported revealed only a few suggestive comments² but no specific statement.

In an attempt to confirm these observations, Artane and Cogentin were stopped in another series of patients with drug-induced parkinsonism. Only 11 of 49 patients in the new series redeveloped any parkinson symptoms. One of these had been on Cogentin only 18 days, but another patient who had been on the drug for only 23 days had no return of symptoms. Some patients who had been on Artane for over two years had return of symptoms.

DISCUSSION

Thus we have patients demonstrating 3 divisions of parkinsonian sensitivity to ataractic drugs: 1. The group which does not develop parkinsonism even with major amounts of the drugs (i.e., two grams of Thorazine daily); 2. Those patients who develop parkinsonism that will not relent even with temporary reduction of drug or an anti-parkinson agent; and, 3. Those

¹ Norristown State Hospital, Norristown, Pa.

² Kenchegul, Leon: *Med. Annals of the District of Columbia*, Aug. 1958.

patients whose parkinsonism can be controlled by temporary reduction of the level of ataraxic or by temporary use of an anti-parkinson agent.

There are both practical and theoretical implications to this finding. The majority of patients with drug-induced parkinsonism, after a period, no longer need the anti-parkinson drugs they are receiving. There is a potential saving in side-effects, time, effort, and money in withdrawing all patients with drug-induced parkinsonism after approximately two months of therapy with anti-parkinson drugs, restarting only those who redevelop symptoms. Our finding would indicate that approximately three-quarters no longer need such medication.

The theoretical aspects raise several questions on the nature of drug-induced parkinsonism, obviously different from post-encephalitic or idiopathic forms of parkinsonism which do not relent after treatment.

Central synaptic transmission is dependent upon normal acetylcholine cholinesterase activity. Since all of the recognized anti-parkinson agents are noted to have anticholinergic properties, one might speculate that the ataractic drugs temporarily impair the acetylcholine-cholinesterase equilibrium in the neostriatum and paleostriatum, and that this action is reversed by the anti-parkinson agents. Perhaps the anti-parkinson agents facilitate more normal synaptic transmission by increasing the cellular threshold to acetylcholine.

Any hypothesis should predicate the tissue's ability to gain permanent relief from toxic tremor and rigidity when the clinical symptoms are relieved but the toxic agent remains in the circulation. We are now observing the length of time necessary for development of the adaptive mechanism, and considering its mode of action.

RESPONSES OF TREATMENT-REFRACTORY CHRONIC SCHIZOPHRENICS TO CHLORPROMAZINE WITH CONCURRENT ADRENOCORTICAL STEROID¹

KISIK KIM, M.D.²

It is generally accepted that overtly anxious schizophrenic patients are amenable to therapy, and one sign that characterizes the majority of treatment-refractory chronic schizophrenics is the lack of such anxiety.

Based on observations that the blood adrenocortical steroid level is elevated in anxiety states (3, 4), and that adrenocortical function is depressed in chronic schizophrenics (3), it was postulated that adrenal steroids (though apparently not therapeutic by themselves in schizophrenia (1, 2, 5, 6)) might "activate" such patients, thus rendering them more responsive to presently available treatments.

This study was carried out to determine whether Aristocort, a biosynthetic adrenocortical steroid, would have beneficial effect

on the response pattern of treatment-refractory chronic schizophrenics to chlorpromazine.

METHOD

Ten chronic schizophrenic patients at Norfolk State Hospital were selected on the basis of their records and clinical examinations and were divided into 2 matching groups of 5 patients each: an experimental and a control group.

There were 2 women and 3 men in each group. In the experimental group, the ages of the patients ranged from 37 to 52 years (mean 42.8 years), and length of current admission, from 4 to 25 years (mean 15.4 years). In the control group, the age range was from 33 to 49 years (mean 41.4 years), and current admission length from 10 to 28 years (mean 20.2 years).

The outstanding clinical features of these patients were: severe withdrawal, inertia, indifference to surroundings, flatness of af-

¹ Aristocort triamcinolone (9 α Fluoro 16 α hydroxy prednisolone) and placebo were supplied by Lederle Company for this study.

² Research Division, Nebraska Psychiatric Institute, and Dept. of Neurology & Psychiatry, University of Nebraska College of Medicine, Omaha, Neb.

fect. lack of outward anxiety, thought disorganization with delusions and hallucinations. None of the patients communicated spontaneously. All previous somatic treatments including chlorpromazine were ineffective in these patients.

The patients of the experimental group received chlorpromazine and Aristocort while those in the control group received chlorpromazine and Aristocort-placebo. Doses were: chlorpromazine 200 mg.—400 mg./day, and Aristocort (or Aristocort-placebo) 8 mg.—16 mg./day. Medications were given 4 times a day for 3 weeks after which steroid was tapered off in one week. The Aristocort (or Aristocort-placebo) was given one hour before each chlorpromazine medication.

The "double blind" procedure was used and evaluation was based on the behavioral changes of the patients, observed daily by the ward attendants, research nurses and ward physicians. Each patient was also seen weekly by a physician in a more structured interview situation. Psychotherapy was not attempted.

RESULTS

Two patients of the experimental group, both women, showed a transient improvement consisting mainly of increased alertness to surroundings and better communicability. One of these spontaneously reported that she was "feeling better." The other showed a reduction in the degree of her delusional preoccupations and was able to communicate meaningfully.

One male patient of the control group showed a similar unsustained improvement in that he was able to participate in ward activities. Significant exacerbation of symptoms did not occur in any patient.

The medication of one male patient of the experimental group was discontinued on the 12th day of the study because of questionable findings on chest X-ray films and a persistent neutrophilic (segmented) granulocytosis of over 18,000 (a lesser degree of leucocytosis occurred in the remaining 4 patients of the experimental group).

Otherwise, no significant abnormalities of physiology were noted in the two groups.

In conclusion, adrenal steroid as given in this study seems at best only slightly beneficial in enhancing the responses of treatment-refractory chronic schizophrenics to chlorpromazine.

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EXPERIENCE WITH TRIFLUOPERAZINE IN THE TREATMENT OF 100 CHRONIC ANERGIC SCHIZOPHRENIC PATIENTS

LEON REZNIKOFF, M.D.¹

One hundred chronic schizophrenic patients had been treated with trifluoperazine for a period of 3 to 12 months. The patients selected for this study were so-called chronic back ward patients predominantly so apathetic, resistive and withdrawn that it had been difficult to engage them in any ward activities.

A few of these patients would develop from time to time episodes of excitement during which they would become destructive and require either restraint or maintenance electric shock therapy.

These patients had been previously treated with shock therapy and numerous ataractic drugs, but either failed to maintain improvement, or relapsed soon after completion of therapy.

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The group consisted of 58 males and 42 females, varying in age from 21 to 69 years. The average duration of psychosis was over 9 years.

The following types of schizophrenia were represented in the group: paranoid type, 52; catatonic, 11; hebephrenic, 12; chronic undifferentiated type, 13; schizoaffective, 8; simple type, 3; mixed type, 1.

Trifluoperazine was used in doses of 4 mg. to 40 mg. per day, although majority obtained maximum improvement on about 20 mg. per day, and required about 10 mg. per day as a maintenance dosage after improvement had been achieved. A few patients refused oral medication and had to be given it intramuscularly; however, after one week there had been no difficulty in using oral medication. Trifluoperazine was given twice a day.

One female patient, A.H., developed marked athetoid movements after only 3 days on 5 mg. b.i.d.; the movement stopped when she was given caffeine sodium benzoate 7½ grains intravenously, Artane by mouth and trifluoperazine discontinued temporarily; after another week she was started again on smaller doses of trifluoperazine (2 mg. b.i.d.) which was later increased to 2 mg. t.i.d., but she had no further difficulties.

Forty patients (15 male and 25 female) developed extrapyramidal system symptoms, which subsided when the dose of trifluoperazine had been diminished and Artane, Cogentin or Akineton had been added to the therapy. The last three drugs were equally effective in controlling the extrapyramidal manifestations.

There were no cases of jaundice, skin rash or agranulocytosis; slight leucopenia was observed in a few patients; blood counts have been made on these patients at weekly intervals, on others once a month; there was no significant drop in blood pressure, nor marked gain in weight.

A female patient who had been treated previously with large doses of chlorpromazine and gained about 30 pounds in weight objected strenuously to it, after several months of trifluoperazine there was no change in weight.

Of the 100 patients, 21 improved sufficiently to be released for convalescent care; another 35 patients made a fairly good institutional adjustment to the extent that they began to participate actively in occupational and recreational departments; 44 patients made only slight improvement or no improvement at all, and therefore classified as unimproved.

Several patients did not begin to show any improvement until they had been treated with trifluoperazine for two or three months; then the improvement became so marked that all ward personnel and even other patients would comment on rapid rate of improvement, after initial advance had been made.

It is necessary to establish minimum maintenance dose for each individual patient. To maintain the improvement, trifluoperazine may need to be administered to these patients indefinitely. It is also interesting to note that some patients relapse when taken off medication for only a few days, or if the dose is drastically reduced.

SUMMARY AND CONCLUSIONS

1. One hundred chronic anergic schizophrenics refractory to all previous therapy had been treated with trifluoperazine over a period of 3 to 12 months.

2. Twenty-one patients improved sufficiently well to be released from the hospital for convalescent care, another 35 patients made a fairly good institutional adjustment to the extent that they are participating actively in occupational and recreational departments; 44 remained unimproved.

3. Forty patients developed extrapyramidal symptoms, easily controlled by Artane, Cogentin or Akineton.

4. The optimal dose had to be determined for each patient on an individual basis; some patients relapsed in a few days, if dosage was markedly reduced or discontinued, indicating that for these patients trifluoperazine therapy will have to be continued indefinitely.

5. No cases of jaundice, skin rash or agranulocytosis developed in any of these patients even after 12 months on the drug.

No marked changes in weight or blood pressure were observed.

Addendum: Since this paper was sub-

mitted, 6 more patients improved sufficiently to be released from hospital for convalescent care, making a total of 27.

TRIFLUOPERAZINE IN REFRACTORY SCHIZOPHRENIC PATIENTS

JOHN M. ERDOS, M.D., AND JULIUS HILLINGER, M.D.¹

In November 1958, we began a clinical trial of trifluoperazine in a selected group of chronic schizophrenic patients from the Veterans Division of Kings Park State Hospital. Forty-seven patients who had failed to respond to several other kinds of therapy including insulin, electroshock, chlorpromazine, prochlorperazine, or lobotomy were selected for this study. Their ages ranged from 25 to 70 years, with the majority in the 25 to 35 age group. They had been hospitalized from 1 to 12 years. Diagnostically they were categorized as follows:

Schizophrenia, paranoid	16
Hebephrenic type	16
Simple type	3
Catatonic type	4
Mixed type	1
Involuntional melancholia	2
Psychosis due to alcohol, acute hallucinosis with paranoid features	1
Psychosis due to trauma	1
Psychosis with syphilis of CNS, meningo-encephalitis	2
Psychosis with cerebral arteriosclerosis	1

METHOD

Before treatment patients were given physical examination, weight was recorded, blood pressure checked, and blood examined for any dyscrasia. These items were rechecked at the end of therapy.

Most patients were started on a 5 mg. tablet daily. Elderly or debilitated patients received one 2 mg. tablet b.i.d. Dosage was increased gradually during the first few weeks until most patients were receiving 5 mg. t.i.d., then increased to 10 mg. b.i.d. Nineteen of the 47 patients received 20 mg. as the maximum dose, while 12 others required 30 mg. a day. The remaining 16

received varying dosages from 10 mg. to 70 mg. daily. Only one patient required 70 mg. to control his hostile and aggressive behavior.

Three patients received trifluoperazine in combination with electroshock therapy.

RESULTS

(See following table). Improvement was classified as *marked* when there was a significant improvement in both mental status and ability; *moderate* when patients showed only slight mental improvement but good improvement in general behavior, verbal communication, and activity on the ward; *slight* when there was no effect on the patient's psychosis but a slight improvement in general behavior.

Marked improvement	7 pts. (15%)
Moderate improvement	10 pts. (21%)
Slight improvement	17 pts. (36%)
No improvement	13 pts. (28%)

All 3 patients who received trifluoperazine in combination with electroshock therapy showed marked or moderate improvement. Two of them had been receiving ECT without response until trifluoperazine was added. Patients continued on trifluoperazine on completion of ECT. No untoward effects resulted from combining ECT and trifluoperazine therapy.

SIDE EFFECTS

No hematological or hepatic complications or dermatological reactions or excessive gains in weight were seen. Side effects observed included the following:

Blurring of Vision: (One patient) probably due to the atropine-like effect of the drug. The effect subsided spontaneously without any change in the regimen.

¹ Kings Park State Hospital, Kings Park, N. Y.

Marked Extrapyramidal Symptoms: Severe tremors were seen in 2 patients. One of these was given Kemadrin (15 mg.) in conjunction with the 20 mg. of trifluoperazine he was receiving. The symptoms persisted and the trifluoperazine was discontinued and phenobarbital substituted. For 6 more days the patient showed marked restlessness, severe tremors and had crying spells. The reaction disappeared gradually and the drug was not reinstituted. Another patient also had marked tremors and some difficulty in swallowing; the reaction was controlled when the antiparkinsonian drug was added and the dosage of trifluoperazine reduced from 30 mg. to 20 mg. daily.

Dyskinetic Syndrome: (3 patients) One in particular presented severe symptoms: spasms of the neck muscles, extensor rigidity of the back muscles and corpopedal spasms. The reaction was quickly controlled in all 3 patients by the immediate administration of 7½ grs. of caffeine sodium benzoate intravenously. These patients

were not continued on Stelazine.

Akathisia: (9 patients). This is a specific symptom consisting of restlessness and inability to sit down and relax. These patients were unable to sleep well at night and sometimes were found pacing the ward. These symptoms were observed especially at the beginning of the treatment and usually disappeared spontaneously within a few days or whenever the dosage of trifluoperazine was slightly reduced.

A number of other patients manifested slight tremors, which were brought under control very quickly with the administration of antiparkinsonian medication.

The use of trifluoperazine requires considerable care and individualization of dosage. When the drug is properly used, it appears to be helpful in patients who have not responded to other therapies.

Our thanks and acknowledgement are made to Dr. Charles Buckman, Director for his keen interest and helpful suggestions in preparing this report.

REPORT OF A CASE OF CONVULSION AND SKIN REACTION FOLLOWING BRIEF ORAL ADMINISTRATION OF IMIPRAMINE (TOFRANIL)

DANIEL GESENSWAY, M.D., AND KENNETH D. COHEN, M.D.¹

Early clinical evidence suggests that Tofranil in the treatment of depressions is well tolerated, with serious side effects rarely encountered. Literature supplied by the manufacturer(1) states that evidence of any effect on the convulsion threshold in epileptic patients is contradictory and inconclusive. One study(2) of 84 psychiatric patients receiving Tofranil reported epileptiform seizures in 2 patients, one of whom had a past history of epilepsy and the other a characteristic EEG. A recent study by Pollack(3) reported no convulsive seizures in 273 patients. The case here reported exhibited a severe reaction to sunlight and grand mal seizures following brief administration of Tofranil.

The patient, a 46-year-old white married housewife, was admitted to the hospital in September 1959 for the second time in 3 years. She is a very small woman who on admission appeared to be somewhat fearful and profoundly depressed. She would sit on the edge of her chair wide-eyed, staring vacantly into space. She became tearful when speaking of the recent death of a sister. She appeared to be preoccupied, withdrawn, with considerable psychomotor retardation. No gross disturbance of thought processes apparent. The patient stated that she began to feel increasingly depressed and tense since the death of her sister 4 months before admission to the hospital. She had difficulty with sleeping, some loss of weight, diminished appetite, but complained most of increasing trembling in her hands which she associated with nervousness.

Information from the patient's family stated that she has been ill for approximately 15 years with various somatic complaints including headaches, frequent cramps in her feet, spasms

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the patient was associated with feeling shortness of breath and occasional episodes of stiffness and tenderness over her whole body which were relieved by a good back rub. These were believed to occur when the patient was excited or something causing emotional strain. The patient had an electroencephalogram in January, 1955, because of her twitches. This EEG was reported as showing fast frequencies with low voltage amplitudes, but was considered to be within normal limits.

Hospital Course: The patient was at once placed on 25 mg. Tofranil q.i.d. and gr. 3 of Tofranil at bedtime. On the second day she experienced a grand mal type of seizure; she was placed in bed and given phenobarbital. Tofranil was discontinued. Physical examination revealed increased deep tendon reflexes, but no other signs except what appeared to be a severe sunburn with erythema and edema over her face and the exposed portions of her hands and legs. Three hours later the patient had another grand mal seizure which lasted approximately 2 minutes. After Tofranil was discontinued no further seizures occurred and

the skin involvement gradually subsided within a few days. An EEG 3 weeks after her convulsions revealed profuse, sometimes sharp theta waves. This was reported as being consistent with, but not exclusively diagnostic of epileptic phenomena. An EEG was repeated 2 weeks later and the tracing was noted to be essentially unchanged except for slightly less theta activity.

It was felt that in this case sensitivity to Tofranil may have been a precipitating factor in a moderately severe sunburn reaction and 2 grand mal seizures after very brief oral administration of the drug. These symptoms did not recur when the drug was stopped and no after effects were noted.

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THIORIDAZINE (MELLARIL)¹ IN THE TREATMENT OF CHRONIC SCHIZOPHRENICS

JOSEPH A. BARSA, M.D., AND JOHN C. SAUNDERS, M.D.²

In recent years an increasing number of phenothiazine derivatives has been developed for the treatment of mental illness. Clinical experience has shown that the more potent a drug is in its anti-psychotic effectiveness, i.e., effectiveness in combating the delusions and hallucinations of the schizophrenic, the more prone is the drug to produce extra-pyramidal side effects. However, it has also been demonstrated that the development of extra-pyramidal symptoms is not essential to the anti-psychotic action, for in many instances the use of anti-parkinson drugs can entirely remove the extra-pyramidal side effects and not diminish the anti-psychotic efficacy of the tranquilizer. Efforts have been made, therefore, to develop a phenothiazine derivative with anti-psychotic action but without extra-pyramidal side effects. Thioridazine (Mellaril) has been

described as such a drug³. The purpose of the present study was to test thioridazine in the treatment of chronic schizophrenics who had developed extra-pyramidal symptoms with other phenothiazine derivatives.

One hundred chronic female schizophrenics between the ages of 16 and 71 were selected. They had been continuously hospitalized for 2 to 25 years. They had been receiving a variety of tranquilizing drugs for 2 to 4 years, and during the last 6 months had reached a plateau of slight or moderate improvement in their psychosis. Forty-two patients were receiving chlorpromazine (Thorazine), 5 prochlorperazine (Compazine), 3 trifluoperazine (Stelazine), 12 chlorpromazine combined with prochlorperazine, 37 chlorpromazine combined with trifluoperazine, and 1 chlorpromazine with reserpine. Furthermore, with all of these patients it had been necessary to add benzotropine methanesulfonate (Cogentin) to the medication in order to relieve extra-pyramidal side effects such as,

¹ Mellaril was supplied by the Sandoz Pharmaceutical Laboratories, Hanover, N. J.

² Rockland State Hospital, Orangeburg, N. Y.

Parkinsonism, akathisia and dystonic symptoms. The above tranquilizing drugs and the benztropine methanesulfonate were discontinued immediately prior to this study with thioridazine.

The dose of thioridazine was started at 50 mg. q.i.d. and was gradually increased until either satisfactory therapeutic results were achieved or significant side effects appeared. In the first month, when the dose of thioridazine was not above 400 mg. a day, no extra-pyramidal symptoms were observed. However, 7 patients complained of dryness of the mouth, 6 of dizziness, and 3 of a "hangover" feeling. As the dose of thioridazine was raised (600-2000 mg. a day), some patients showed evidence of extra-pyramidal symptoms, necessitating the addition of benztropine methanesulfonate. Eight patients developed signs of Parkinsonism, 5 generalized tremulousness, 10 akathisia, and 2 dystonic symptoms. There were also two patients with photosensitivity. Two patients on 100 mg. q.i.d. and 200 mg. q.i.d. respectively had grand mal convulsive seizures for the first time, even though they had been on equally high doses of chlorpromazine in the past without incidence of seizures.

Thioridazine was administered for 5

months, and at the end of this period the patients' progress as compared to their mental condition just prior to this study, was evaluated as follows: 3 patients were markedly improved, i.e., in remission and ready for release, 16 moderately improved, 44 slightly improved, 33 unimproved, and 4 patients were worse, being more tense, overactive, irritable and disturbed.

It was observed that thioridazine, as compared to chlorpromazine, had a weaker sedative effect even when high doses were used. Thus, it was not as useful as chlorpromazine in treating the very disturbed patient. On a milligram for milligram basis, the anti-psychotic effect of thioridazine was not as potent as that of chlorpromazine, and higher doses of thioridazine were needed to achieve the same effect. However, one of the advantages of thioridazine was that even with high doses excessive drowsiness and lethargy were usually not produced. In chronic schizophrenia, therefore, thioridazine's greatest usefulness appears to be in the treatment of those patients who develop severe or persistent extra-pyramidal symptoms with one of the other phenothiazine derivatives.

³ Kinross-Wright, V. J.: J.A.M.A., 170: 1283, 1959.

MELLARIL IN THE TREATMENT OF CHRONICALLY DISTURBED PATIENTS: WITH SPECIAL REFERENCE TO REDUCED EXTRAPYRAMIDAL COMPLICATIONS

A. KHAKEE, M.D., AND G. F. HESS, M.D.¹

One of the limiting factors in the use of the phenothiazine derivatives is their tendency to induce extrapyramidal stimulation, ranging from akathisia to Parkinsonism, at doses which do not provide adequate tranquilization. Concomitant use of anti-Parkinson drugs, adds additional cost to therapy without eliminating the basic cause of extrapyramidal stimulation.

Reports that a comparatively new phenothiazine, Mellaril² (thioridazine hydrochloride), was relatively devoid of extra-

pyramidal stimulation while yet effective as a neuroleptic prompted us to undertake the evaluation reported here. A total of 22 patients were selected from the male psychiatric service; 18 of these had responded with extrapyramidal symptoms to every phenothiazine previously employed. The remaining 4 had remained completely refractory to all forms of therapy.

All 22 were chronic cases, 6 having been hospitalized for from 1-5 years, and the remaining 16 for periods in excess of 5 years. Diagnoses were: 18 schizophrenic reactions and one each of generalized

¹ Danvers State Hospital, P. O. Hathorne, Mass.

² Sandoz Pharmaceuticals, Hanover, N. J.

parosis, epidemic encephalitis with psychosis, manic depressive and alcoholic deterioration. The usual starting dose was 300 mg. daily, except for two debilitated patients who received 100 mg. daily. Range of dosage initially was from a minimum of 100 mg. to a maximum of 600 mg. daily, which was then reduced as indicated to a maintenance dose of 300-400 mg. per day.

At the time the 18 patients were switched to Mellaril, each one was exhibiting extrapyramidal symptoms to one of the following drugs: chlorpromazine, trifluorpromazine, mepazine or trifluoperazine. Within 72 hours after the institution of Mellaril, there was complete remission of these symptoms in 15 patients. Drooling, tremulousness, motor restlessness and mask-like facies disappeared, food intake increased and the patients became generally more manageable. No reappearance or evidence of extrapyramidal stimulation whatsoever has been observed in these 15 patients during their treatment with Mellaril. The remaining 3 patients required a reduction in dosage and adjunct medication to relieve their extrapyramidal symptoms.

The clinical improvement in mental status was as follows: one patient markedly improved and paroled; 5 patients greatly improved and transferred to front wards; 9 patients moderately improved but retained in the same ward; 3 patients not improved.

The remaining 4 cases, diagnosed as

schizophrenic reaction, had been refractory to previous therapy. Two of these improved sufficiently to permit home visits for one and placement of the other in a parole ward.

Two patients who had exhibited photosensitivity to other phenothiazines did so to Mellaril as well, but improved on routine therapy and a reduction in dosage. Hypotension occurring in 3 patients was controlled by a reduction in dosage. One patient showed "catatonic" symptoms on 400 mg. which cleared up when the dose was reduced to 200 mg. daily. Examination has failed to reveal any evidence of jaundice or blood dyscrasias during the entire 9 months' course of treatment with Mellaril.

SUMMARY

Moderate to marked improvement in psychomotor behavior was obtained with Mellaril in 17 of the 22 cases in this series. In addition, there was complete elimination of extrapyramidal activity in 15 of 18 patients who had manifested Parkinsonian symptoms with the drugs previously employed. Our observations indicate that Mellaril is equally effective, or more so, than other phenothiazines in the treatment of various psychiatric disorders, but has a distinctly lessened tendency to induce extrapyramidal stimulation. In our experience, this is a significant contribution to the more effective management of larger numbers of disturbed patients.

SLEEP REGULATION WITH THALIDOMIDE

SIDNEY COHEN, M.D.¹

Insomnia apparently is a widespread disorder; measures other than drugs can usually induce satisfactory relaxation and sleep in the milder cases. However, when tension, anxiety or depression impairs sleep the long hours of restless wakefulness augments the underlying disorder and chemical intervention may be indicated. Occasionally, lesser tension states and situational depressions

will respond satisfactorily merely with correction of the insomnia.

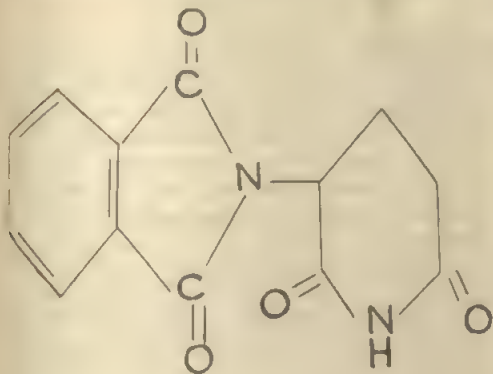
Accidental or suicidal overdosage and habituation to the hypnotics are serious drawbacks to their use. Many non-barbiturate sleeping medications have been proposed but the ideal, non-toxic, non-habit forming agent is yet to be found.

Thalidomide² is a further attempt to

¹ From the Neuropsychiatric Hospital, VA Center, Los Angeles 25, Calif.

² Kevadon is the trademark of the Wm. S. Merrell Co., Cincinnati, Ohio for its brand of Thalidomide.

provide a safe somnifacient. Opinions about its capacity to addict will have to await future studies, no instances of habituation have been reported to date. Thalidomide is alpha (N-phthalimido)-glutarimide represented structurally as :



The LD₅₀ of thalidomide in mice could not be determined by Kunz, *et al.* (1). Oral and subcutaneous doses of 5 gm/kg and 1 gm/kg intraperitoneally were well tolerated and did not produce death in any of their animals. Thalidomide has been used extensively in Europe (2). Reports of death due to overdosage have not appeared. A 70-year-old patient survived a single dose of 2100 mg. without treatment (3).

Thalidomide was given to 50 neuro-psychiatric inpatients for whom barbiturates, chloral hydrate or glutethimide had been routinely ordered. Single bedtime doses of 100 to 200 mg. were administered with an occasional patient requiring only 50 mg. The patient's subjective impression of the sleep producing and sleep sustaining properties of thalidomide as well as a comparison with his prior sleep medication were recorded. The nurses charted their overall impressions of the patient's nocturnal activities.

The results over a 6-month period have been very satisfactory. Some patients report that thalidomide is the best sleep inducing medication that they have ever taken. A few state that it is ineffective even in 200 mg. amounts. Excellent results were obtained in

21 patients (42%). They had the subjective recall of restful sleep without associated grogginess or dizziness on awakening. Seventeen (34%) considered that it produced good hypnosis but there were occasional nights when sleep was broken or not restful. Five patients (10%) stated that thalidomide produced adequate nocturnal sedation, but they complained of a "hang-over" upon awakening. Although tolerance to this side effect developed after additional doses, this group were considered treatment failures. Seven patients (14%) persistently complained either of poor induction, broken sleep or very early awakening.

In order to explore the possibility that thalidomide might have ataractic properties, 15 additional seriously disturbed psychotic patients were given total daytime dosages of 1200-2500 mg. The drug was less effective than the available phenothiazines for this purpose. It was interesting to note, however, that these large amounts did not produce stupor. Respiratory depression did not occur. Serial hemograms, liver panels, urine analyses and blood creatinines were unchanged from control values. Abrupt discontinuance of thalidomide did not result in a withdrawal syndrome. One of the patients developed an erythematous rash and temperature of 100.6° rectally. Another patient on the high dosage study had a blotchy rash and convulsed while on thalidomide. The medication was discontinued in both cases without further sequelae.

SUMMARY

Thalidomide is an effective agent for the treatment of insomnia with a safety factor which makes its use desirable when there is danger that accidental or deliberate overdosage may occur.

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CASE REPORTS

AN UNUSUAL PERVERSION : THE DESIRE TO BE INJURED BY AN AUTOMOBILE OPERATED BY A WOMAN

MARTIN H. KEELER, M.D.¹

Some perversions, while representing formidable psychopathology, are also tributes to the complexity of the human mind and unconscious ego mechanisms.

The patient, a man in his late twenties, reported a periodic desire to be injured by a woman operating an automobile. This wish, present since adolescence, he had by dint of great ingenuity and effort, gratified hundreds of times without serious injury or detection. Satisfaction could be obtained by inhaling exhaust fumes, having a limb run over on a yielding surface to avoid appreciable damage or by being pressed against a wall by the vehicle. Gratification was enhanced if the woman were attractive by conventional standards. Injuries inflicted by men operating automobiles or other types of injury inflicted by women had no meaning. He experienced pleasure from the experience, thus establishing the symptom as a perversion rather than a compulsion.

The patient's sexual, social, and occupational adjustment was good and his intelligence superior. He intellectualized to a considerable extent but could experience and manage strong positive and negative feelings. He was ashamed

of his symptom but somewhat proud of its unusual nature. A Minnesota Multiphasic Personality Index did not demonstrate significant psychopathology and did not indicate the probable presence of perversion or impulse neurosis.

Because of limited contact with the patient and considerable use of repression on his part, past history is not considered adequate for a detailed formulation. Two unusual biographical items were the presence of considerable maternal rejection and of a clouded and probably distorted memory of being hurt at the age of 6 by some woman in a manner connected with sexuality. This case does not seem to be unusual in terms of the genetic and dynamic factors involved but is of interest as it demonstrates the complexity of ego operation that can be involved in a perversion. At least two interlocking themes are necessary for an essentially masochistic gratification. The injury must be inflicted by a woman, probably as a defense against other feelings involving women, and must be inflicted by an automobile, this probably having specific symbolic meaning.

TRANSIENT VISUAL SYMPTOMS ASSOCIATED WITH MELLARIL MEDICATION

S. BERGEN MORRISON, M.D.¹

In the fall of 1955 the author was a senior resident in an outpatient clinic during the time Kinross-Wright was carrying on a study involving the use of a phenothiazine called NP-207 (piperidinochlorphenothiazine). NP-207 was an experimental phenothiazine that never reached the open market as visual changes were noted in the patients

in the form of a retinitis pigmentosa. Patients that we saw complained of an inability to see clearly when they had come indoors after having been in the bright sunlight. Many of them showed eyeground changes and a marked loss of vision although early no retinal changes could be detected.

Since these 28 cases were seen in 1955,

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I have been alert as to the possibility of symptoms of this sort occurring with other phenothiazines, although no attempt has been made to question patients directly about whether or not they had symptoms of blurring of vision or dimness of vision on coming in from out of doors. Recently a case has been seen showing the same type of toxic reaction to Mellaril (thioridazine). Mellaril is identical to NP-207 except that a thiomethyl group has been substituted for the chloride.

The patient was a 17-year-old white school boy who was first seen in September of 1959. He was considered to be a schizoid adolescent who was on the verge of a major schizophrenic episode. When first seen, he was put on Pacatal (mepazine) 75 mgm. daily and remained on this medicine for 18 days. The patient then complained that he was not being relaxed enough and was changed to Mellaril 75 mgm. daily. The patient felt relaxed for a time on Mellaril, and remained on 75 mgm. daily until one month later when he was admitted to the hospital in a major schizophrenic episode.

While in the hospital, the patient received Mellaril up to 1200 mgm. daily and remained on that dosage for 12 days. He also received 8 electric shock treatments along with sodium amytal as needed for sleep. He remained in the hospital for 22 days and was dismissed as improved. Three weeks later at the time of a follow-up visit the patient complained that he was not able to see as he came into my office and that he could not read print while sitting at my desk. He had noticed that he was having difficulty seeing when he came in from the outside and had noticed this for approximately 7 to 10 days. No previous visual problems had occurred. At this time he was receiving 400

mgm. of Mellaril daily and had received this amount for the previous 30 days. The patient's eyegrounds were checked in the office and were found to be negative. All medication was stopped. Complete eye examination was done by an ophthalmologist and was considered to be negative. The patient was seen again in 2 weeks and said that he could see much better on coming indoors than he had on the previous visit although he did not feel that his vision was completely normal. He was seen 2 weeks later and indicated that he was able to see clearly in my office and was able to read print normally. In all, the patient had received approximately 30 grams of Mellaril. It cannot be forgotten that he was on Pacatal briefly for a period of 18 days; however, he had not been receiving Pacatal for almost 3 months prior to the onset of his symptoms. It is understood that at least 3 reactions of this sort have been noted with Mellaril to date.² It is felt that an alertness to complaints of this type is needed if serious visual changes are to be avoided in certain patients receiving Mellaril. It is possible that other compounds whose structure is similar could also cause a toxic retinitis.

SUMMARY

A case is presented in which a patient complained bitterly of blurring of vision when coming in from out of doors while receiving Mellaril and after having received approximately 30 grams of Mellaril over a period of 2½ months. The visual complaint cleared over a period of approximately 4 weeks after the Mellaril had been stopped. It is suggested that this is an early toxic reaction to Mellaril of the type seen previously with an experimental phenothiazine called NP-207.

² Personal communication.

HISTORICAL NOTES

DR. RUFUS WYMAN OF THE McLEAN ASYLUM

ERIC T. CARLSON, M.D., AND MAY F. CHALE, A.B.^{1, 2}

Although Dr. Rufus Wyman appears to have been the first fulltime medical superintendent of an American mental hospital, his role in the history of American psychiatry has not received sufficient attention and emphasis. Born on July 16, 1778, in Woburn, Massachusetts, a member of the fourth American generation of a family that had emigrated to Massachusetts in 1640, he was graduated from Harvard College in 1799. After teaching school for one year he embarked upon his medical apprenticeship, and subsequently established an office in Chelmsford.

In his 10 years of general practice Wyman's reputation as a successful country doctor rose rapidly and the demand for his services put him under considerable physical pressure. Ill-health from probable tuberculosis may have contributed to his seeking the newly-established and presumably less arduous post of physician-superintendent at the McLean Asylum. Up to this point there is no evidence that he had any special training in or inclination towards psychiatry.

In January 1817 the Hon. Benjamin Pickman recommended Wyman for the superintendency of the asylum. In the spring of 1818 Wyman's only competitor, Dr. George Parkman, for unknown reasons withdrew his application and Wyman was appointed. In May, Wyman made a tour of the hospitals in New York and Philadelphia, and on October 6, 1818, the first patient was admitted to the McLean Asylum. This asylum was the first mental hospital in New England, and as such represented an experiment: it was founded not only to provide medical treatment for the insane, but also to introduce to New England what Wyman

called "a revolution in treatment"—moral treatment.

Wyman's therapeutic theories had two main sources: Pinel and the Tukes, with the latter influence definitely predominant (2). Wyman quotes from Pinel's writings and may also have derived more intimate knowledge of the Frenchman's work from a friend, Dr. William Walker, who had spent some time in Paris, and from Dr. Parkman, who had studied under Pinel. The influence of the English Quakers and their York Retreat is more obvious and direct. The Friends' Asylum in Philadelphia, which Wyman had visited, was patterned after the Retreat, and Thomas Eddy, whom he had met, had adhered closely to the pronouncements of the Tukes in his campaign to found the Bloomingdale Asylum in New York. Wyman himself had read Tuke's works and recommended them to others.

In his neurophysiology Wyman accepts the conception of the brain as the organ responsible, both through perception and volition, for contact with the outside world. He avoids the arguments of both materialism and immaterialism and, as a good associationist, doubts that the brain itself can initiate any knowledge or action. In stressing that one should observe and emphasize the actions of man rather than the terms by which they may be called he reveals himself as a phenomenologist. He divides phenomena into three orders: the first, physical or inorganic; the second, organic, including both vegetables and animals; and the third, mental, which is restricted solely to the animal world. Since in his opinion the body and the mind are mutually dependent, he strongly advocates that physicians have as thorough knowledge of the mind as of the structure and function of the body. He believes that the body and mind can produce diseases in each other.

In his psychology he emphasizes the need for close observation, following the method

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² This investigation was supported in part by a Research Grant (M-2146) from the National Institute of Mental Health, U. S. Public Health Service.

of Bacon. He is primarily a Lockean associationist, and although he mentions the Scottish faculty psychologists (Reid, Stewart, and Brown), he denies that faculties can be integral parts of the mind. He states, "There is but one agent acting in different ways, or performing different acts." In this stand he also shows no evidence of being influenced by the phrenological theories that were then coming to this country. He complains that even the approved medical writers often show great ignorance of mental functioning, which he feels should be separated into two main divisions: knowledge, or intellect, and the passions, or affections and emotions.

He states that a definition of insanity is difficult, and perhaps even impossible, to formulate, but no more so than a definition of physical illness. He starts off with an idealistic definition that any variation from a perfect state of health must be considered a disease. He modifies this with respect to physical diseases by stating that they should be associated with discomfort or pain, and then attempts a similar modification for mental disease, using a social concept of how other, normal people will judge the individual insane by his behavior. Strange opinions are acceptable in science, but not in ordinary matters. If the strange opinion or behavior is due to lack of information or experience, then the person, if healthy, should respond to education or evidence. Wyman goes on to state that, to the legal world, a delusion or false belief is essential to insanity, but insists that doctors must go further than lawyers to understand how this state arises.

Wyman divides his concept of psychopathology, in which he does not discuss diagnosis, into the two major categories of the mind: the intellect and the passions. The intellect can suffer from perversion, diminution, or augmentation. With the first, perversion, patients usually start from incorrect premises, but reason correctly. He does recognize, however, that faulty reasoning from sound premises occasionally occurs. With diminution, slowness of thinking or poor memory may be present. In the case of augmentation some may deny that it is a disease, being instead a benefit, but he points out that this condition is usually

temporary, with one or more functions out of proportion to the rest of the mental structure.

In the case of the passions, only exaltation or depression can occur. Wyman agrees with Pinel, moreover, in asserting that diseases of the passions or intellect can exist separately, and he states, "These diseases are more to be dreaded than any other, to which man is liable." He recognizes the passions as the main driving source of man's actions, and realizes that when they become excessive the intellect is unable to control them. He feels that in a sound state of mental health the passions are under control, and that an individual must constantly exercise the control function in order to remain healthy. Besides exaltation and depression he recognizes an alternation of both, and gives an excellent clinical description of the transition from a depressed to a manic state. He concludes that a pure disease in one of the functions of the intellect or passions is rare and that there is usually a mixture of almost infinite variations. He makes no sharp distinction between the normal and the insane mind; he points out that the boundary is at best a thin one, and that usually a gradual attack of insanity occurs with almost imperceptible changes at first.

Wyman's theories about psychiatric therapy were derived from his own psychological conceptions and the teachings of earlier advocates of moral treatment. Among his fundamental therapeutic principles are the following: the patient must always be removed from his home and must always receive moral treatment, even if his insanity arises from organic disease; his treatment must extend over an adequate period of time and, above all, he must consistently receive only mild and kindly care. Wyman admits that medical treatment may be required if there is organic disease, but in general he is opposed to bleeding, purging, and low diet, feeling that these methods are seldom beneficial, usually injurious, and frequently fatal. At best the medical treatment must be suited to the state of the individual patient.

To the contrary, moral treatment is for all patients, no matter what their psychiatric state or its cause. In moral treatment it is

important to divert the mind from unpleasant subjects and to break up old associations of ideas. This goal can be achieved through exercise of the body and mind and through formation of correct habits. A constant pattern of life in the hospital through encouragement of proper conduct and adherence to rules and regulations regarding the time of arising and retiring, eating, and exercising are essential to tranquilizing the mind. Patients are encouraged to avoid violence and are told that, if necessary, restraints will be used. Because of the importance of constancy, kindness, and vigilance, Wyman stressed the necessity of obtaining sound, mature, and amiable attendants. He recruited many of his early attendants from the ranks of schoolteachers.

The activity program of moral therapy at the McLean Asylum included both work and recreation. In the former category were such occupations as sawing wood, gardening, sewing, embroidering, and studying the various mechanic arts. For amusements there were draughts, chess, backgammon, ninepins, and music, as well as reading, writing, walking, riding, and swinging. Wyman states in addition that conversation between patients is often useful in showing them the absurdity of their thoughts.

In order to care for the patients effectively, Wyman classified them by sex and by degree and nature of illness. Men and women were kept separate and cared for only by members of the same sex. These two groups were then subdivided into three classes according to their psychopathology, with each class under a supervisor. Each class made up a distinct family, with its own bedrooms, dayrooms, dining rooms, bathing rooms, and airing yards. Each patient had his own bedroom, moreover, so that there was less need for restraint. Chains and straitjackets were never used, and other restraint only with the permission of the supervisor, who then reported it to the superintendent. The punitive aspect of restraints was thereby avoided. No employee was allowed to strike a patient, even in self-defense. Wyman undoubtedly had difficulty applying this classification in the early years when the number of patients was minimal, but this grouping was probably quite effective

with 65 to 70 patients maximum in the hospital, all of whom the physician visited at least once a day.

In the first 5 years of the hospital 28% of the patients were discharged as recovered, while in the second 5 years 43% recovered, and in the third, 40%. Wyman ascribed this appreciable increase to a regulation put into effect in the fall of 1823 that all patients removed before 3 months (as unrecovered) would have to pay for the entire 3 months. This provision contributed to an adequate length of therapy. Over the 15 years of his superintendency Wyman discharged 68% of his patients as improved or recovered, while 9.5% died while in the hospital.

Throughout his medical career Wyman was active in the Massachusetts Medical Society; for many years he served as censor and counsellor from his district and during the last two years of his life he served a term as President. In 1830 he was selected to deliver the annual address to the society. His discourse, "Mental Philosophy as Connected with Mental Disease," was later published in pamphlet form. This, an earlier pamphlet on religion(3), and his annual reports, are his only published writings. The contents of this pamphlet have been discussed in the earlier section on his psychiatric thought.

Also in 1830 Wyman corresponded with Gov. Lincoln of Massachusetts regarding plans for the new State Hospital at Worcester. He wrote of his ideas and offered to lend his assistance provided that he would not be called away from his duties at McLean.

Two years later, however, he decided to resign these duties because of ill-health. But the McLean trustees refused his resignation, allowing him only a leave of absence to improve his physical condition. This time he spent on a trip to northern New England with his wife and daughter. He was then a member of the committee of the Massachusetts Medical Society investigating the question of whether the Asiatic cholera was contagious, and since cholera had just entered Canada, and in spite of his impaired health, he left his family and proceeded to Montreal in order to study the question further. He observed

the patients directly until he himself became ill with a gastro-intestinal disorder (not cholera apparently). He then returned to McLean, only to attempt unsuccessfully to resign in August. In September, however, the trustees voted to separate the duties of physician and superintendent and asked Wyman to remain on as physician at an unchanged salary. Wyman found even this less time-consuming post burdensome to his health, however, and on January 9, 1835, his resignation was finally accepted. He was elected a trustee but declined this position also because of his health.

Upon his retirement he moved to Roxbury, where he engaged in philosophic pursuits and the cultivation of his home and grounds. Married since 1810, he was the father of 6 children and was greatly devoted to his wife and family. He maintained his outside interests also, continuing active in the Massachusetts Medical Society and the American Academy of Arts and Sciences. He later became President of the Norfolk Temperance Society. Although semi-retired he was much in demand as a psychiatrist and he generally had a few psychiatric patients living with him and his family up to the time of his death of a lung infection on June 22, 1842.

Because he was a modest man who made no effort to advance his own fame it is difficult to learn much about his personality. He was hard-working and devoted to his post, being absent from the asylum only 5 nights in his first 14 years there. He seems to have been respected and to have become the friend and confidant of his patients. He had a reputation for justice, honesty, and integrity, as well as for a

talent for practical mechanics. Two of his sons, Morrill and Jeffries, became physicians after being graduated from Harvard and went on to attain greater public fame than their father, but his many years of conscientious service and his enlightened use of psychological treatment for the mentally ill made it appropriate that in later years such diverse people as Luther Bell, Amariah Brigham, and Oliver Wendell Holmes should honor him for his contributions to the development of American psychiatry.

Acknowledgement: Appreciation is expressed to Evelyn A. Woods, A.B., for her assistance in the preparation of this paper.

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JOHANN CHRISTIAN REIL 1759-1813

ERNEST HARMS¹

Outside his native Germany, hardly more than the name of Johann Christian Reil is known. There was considerable astonishment when, in 1957, I published, in the *British Journal of Mental Science* (Vol.

103, No. 433), a paper entitled *Modern Psychotherapy 150 Years Ago*, in which it was shown that no psychiatrist before 1900 had presented more of the basic ideas of this century's psychotherapy than had the author of *Rapsodien ueber die Anwendung der psychischen Kurmethoden auf Geistes-*

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contribution on *Rhapsodies in the Application of Eseric Therapy to Mental Diseases* published in 1803. I venture to predict that later centuries will hand the palm to J. C. Reil as the greatest of them all.

This prediction is not based entirely on the *Rhapsodies*, which led Kirchhoff to call Reil the "conscious discoverer and founder of rational psychotherapy," but also on a number of shorter and now completely unknown works of Reil which were published during the last 5 years of his life. Together with his colleague, Hoffbauer, Reil published, in 1808 and 1812, two volumes of *Beiträge zur Beförderung einer Kurmethode auf psychischen Wege* (Contributions to the Advancement of Psychotherapy), which had originally been intended as a journal. In it we find 9 major contributions by Reil, the longest of which "*Ueber die Centricität der Organismen*" (On the Centricity of the Organisms) (1812), presents the most magnificent psychological-biological philosophy I have ever encountered and which would require a long paper to adequately describe. In this memorial note I should like to point to another of the Reil papers, "*Das Zerfallen der Einheit des Körpers im Selbstbewusstsein*" (The Disintegration of the Unity Experience of the Body in the Self-Consciousness) (1808). In this paper Reil presented a somatological concept of what we today designate as *schizophrenia* and which appears clearer and more convincing than anything presented since. Reil is a psychological phenomenologist for whom the modern concepts of *Ganzheit*, totality, unity, centricity basic elements of scientific interpretation. Psychologically, human experience is a unit experience of body and mind which are to one another, also inseparably tied together in the self-consciousness. If, by the process of abstraction, one boils down all bodily and psychic experiences, one arrives at a final self-recognition which Reil calls the "*Gemein-Gefuehl*"—the basic "completely empty" feeling of being and existence, in which the body is felt vaguely, but the experience is nevertheless that of a unit. There is no notion of space or weight, but only of time. For those born blind and deaf, the *Gemein-Gefuehl* is the major "sense"; for all human

individuals it is the most elementary experience.

It is the *Gemein-Gefuehl* as psychic function that holds our mental life together and mediates between the multitude of elements of which it is composed. It is the carrier of our ego, as well as the frame of our self-consciousness. It is therefore practically involved in all of our perceptions and activities.

A disintegration of the *Gemein-Gefuehl* is the cause of a large number of mental ailments. Its impairment means that it loses the ability of functioning in binding together and controlling the various psychic dynamics. Reil distinguishes two forms of such disfunctioning of the *Gemein-Gefuehl*. The first, the minor form, is a *Lockerung* (loosening) of control; the major form is complete destruction of the *Gemein-Gefuehl* which renders it unfit to coordinate the various mental functions. In the examples offered by Reil we see the most evident cases of what Kraepelin and Bleuler called *dementia praecox*, what Morton Prince called the split personality, and what we today commonly call *schizophrenia*. There is the case of the patient who believes he is not himself, that he is someone else or has someone else's body. There is the patient who is not sure whether the hand he writes with is his hand or whether it is his right or left hand. There is the patient who believes himself incapable of using this or that part of his body, or has a catatonic freezing of the posture or of the tongue. There is the case of the person who does not know that it is he who is speaking and who uses false words. Another well-known pattern is that of the patient who is unable to distinguish between the actor and the listener. There are the cases of dissociation of space, in which nearby sounds and objects appear to be distant and distant ones oppressively near. And there are the most serious paranoid forms of split and double personality in which the ability to recognize reality does not exist.

Reil was far from being a "psychist" who believed that all mental illnesses are entirely psychic. He recognized the actual neurological diseases and the validity of somato-psychological aspects. But based on

his concept of the *Gemein-Gefuehl*, he maintained that they were "diseases of the psyche," that is, of the basic unity of our mental or psychic disposition. At one point he designated the phenomena as illnesses of the centricity power of the organization of the psyche, which has primarily a dynamic function.

Towards the end of his treatise, Reil tries to make it very clear that in the cases described there exists, of course a relationship between the psyche and the nervous system as well as the rest of the physical organism, which may or may not have

become involved or affected. Basically, however, the disintegration that Reil described, and which description represents the first full-fledged presentation of schizophrenia, is a psychic pathology. Although the theory that schizophrenia is entirely or primarily a psychic disease has been seriously challenged in recent years, it has yet to be determined whether the psychiatrist who was the first to describe it as such was right or wrong. Nevertheless, the amazingly clear presentation by Reil in 1808 deserves to be known, and it should survive the struggle of opinions about it.

COMMENTS

REGIONAL PSYCHIATRY

For a considerable time we have published each year in one of the Spring issues of this *Journal* a survey of psychiatry facilities in the city where the annual meeting of The American Psychiatric Association is to be held, and in the surrounding area as well; sometimes including an outline of the history and organization of the psychiatric services of the state concerned. This has been possible through the courtesy of members active in the respective regions.

The purpose of these articles on regional psychiatry has been to familiarize attending members with the work going on in the area where they meet and to facilitate visits or further inquiries they may wish to make.

Five years ago the annual meeting was held in Atlantic City, New Jersey. This year's meeting is the sixth to convene in this popular seaside resort. An excellent comprehensive account of psychiatric institutions and activities in the State of New Jersey was prepared by Dr. Henry A. Davidson, Superintendent and Medical Director of Essex County Overbrook Hospital at Cedar Grove, and appeared in the April 1955 issue of the *Journal*. Visiting delegates are referred to this article.

The following changes and additions have been made:

New Jersey's mental health program is operated by the Division of Mental Health and Hospitals in the Department of Institu-

tions and Agencies. Mr. John W. Tramburg is the Commissioner, and the Director of Mental Health and Hospitals is Dr. V. Terrell Davis, a fellow of the American Psychiatric Association. Significant developments since 1955 include:

1. Reduction of the census in the state hospitals to current figures:

Greystone Park	5200
Trenton	3300
Marlboro	3000
Ancora	2250
2. The establishment of an active Bureau of Research in Psychiatry and Neurology under the direction of Dr. Joseph Tobin. The laboratories and offices of the Bureau are located on the grounds of the New Jersey Neuro-Psychiatric Institute at Princeton.
3. The establishment of a state supported community mental health services program which has replaced the former mental hygiene clinics of the state hospitals and has been accompanied by the development of outpatient departments providing a continuum of services to patients applying to the State mental hospitals.
4. Seton Hall College of Medicine, New Jersey's first and only medical school, will graduate its first class of students in June of 1960.

AMERICAN CHILD PSYCHIATRY, LTD. ?

A few years ago, I received a complimentary copy of a Russian textbook of child psychiatry by a leading representative of the specialty. Not one of the innumerable references gave the slightest indication that any work had ever been done outside the geographic boundaries of the Soviet Union. There was one casual mention of Kraepelin and one of Mayer-Gross. *Viola tout.*

How do we in this country fare by com-

parison? A comprehensive 1958 survey of the problems in mental abnormality offered a bibliography of 303 items; of those only 13 (4.3%) referred to articles in languages other than English. The papers published in 1958 in an American quarterly, the bulk of which is devoted to child psychiatry, referred to a total of 476 sources, of which 15 (3.2%) stemmed from non-English authors. There were, in addition, 22 quotes

from translations of German-language contributions, of which 17 were early psychoanalytic treatises (12 by Freud, 3 by Fenichel, and 2 by Ferenczi); 26 book reviews dealt exclusively with books in the English language. At the 1954 *International Institute of Child Psychiatry*, 18 of 24 papers were read by persons residing on the North American Continent (17 from U. S. A., one from Canada); the references appended to those studies did not contain a single item reported in a foreign language.

This is slightly better than the total omission of non-domestic investigators in the Russian textbook but hardly a cause for self-congratulation. The impression is given that we here do not know about, or do not care for, work done elsewhere. In fact, one is left with the feeling that no such work is being done or has been done elsewhere or that, if it does exist, it does not merit our serious attention. It is a rare American child psychiatrist, indeed, who has ever heard, for instance of Ziehen, de Sanctis, Homburger, Tramer (the man who has coined the very term, child psychiatry), Heuyer, van Krevelen, Stutte, Lutz, or Michaux, all of whom have helped or are helping substantially to build the specialty. Equally rare is the American child psychiatrist who finds occasion to consult the *zeitschrift für Kinderpsychiatrie*, the *Études de neuro-psycho-pathologie infantile*, *Infanzia anormale*, and other periodicals, or the excellent monographs issuing from the Scandinavian countries—valuable depositories of significant investigations.

Anyone familiar with those publications or visiting the centers from which their contents originate knows that this seeming snub is not reciprocated by the men abroad. Our books and journals are read and quoted, and the European child psychi-

atrists are well acquainted with the work of their confrères across the ocean, at the same time a bit puzzled by our apparent lack of interest in their own contributions.

Of course, there is no deliberate snub on our side, nor is the described situation created by nationalism. There certainly is no intention of self-containment and, it is hoped, no smug conviction that we are in sole possession of the key to progress. We have, to be sure, developed fruitful ideas and practices of which we have a right to be proud but others have not remained inactive and much important research has been, and is being, carried out in other countries.

The answer lies mainly in the fact that ours is a unilingual nation and that foreign-language communications are therefore not generally accessible to American readers. In most of the other sciences, including adult psychiatry, these limitations are taken care of by reviews and abstracts of the international literature. The purpose of this editorial outpouring would be served if our teachers and reviewers made it a point to look beyond the linguistic frontiers and to give our students and readers the benefit of familiarity with the work in child psychiatry done in other areas. It will then be easier to avoid the embarrassment caused by the question of a noted European child psychiatrist who asked: How do you explain that some of you Americans are so full of curiosity about the Rorschach responses of children in primitive cultures while there seems to be so little curiosity about the scientific productions of people engaged in the study of psychiatric problems of children in cultures so similar to yours?

L. K.

THE SUM OF PHILOSOPHY

Things happen.

—ARISTOPHILUS (Attrib.)

CORRESPONDENCE

FUNKENSTEIN TEST

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : Having had experience with almost 2,000 Funkenstein tests, which we call the ANSR, "Autonomic Nervous System Reaction"(1), I would like to comment on the letters in the December issue of the Journal from Alberto DiMascio, and Manfred Braun, M.D.

In my experience and to my knowledge of the literature, no one has yet been able to utilize the Funkenstein as a prognostic agent in determining which tranquilizer or, for that matter, psychic energizer should be used. The basis of the test however, remains unaltered in that it is the only graphic means of putting the responses of the autonomic nervous system on paper, and having them fall into the 7 original categories, devised by Funkenstein.

One of the greatest difficulties in our experience has been the initial phase of the test when epinephrine is injected intravenously. It becomes rather a problem to estimate at which level the systolic pressure might rise in the next 30 seconds. Human error often leads to a false recording and sometimes the full significance of the test is lost. The second or Mecholyl phase of the test is not so dramatic and the response is less rapid and more easily plotted.

We have just received from England, equipment designed by H. J. Green, M.D. (2), Dept. of Physiology, Middlesex Hospital Medical School, London W 1, which is described as the "Winston Blood Pressure Follower." This provides a continuous recording of blood pressure with minimum discomfort to the patient and does not use the conventional arm cuff or arterial cannulation. A finger cuff instead is used and

systolic pressure is recorded continuously on a dial in the front panel, on a sphygmomanometer and on heat sensitive chart calibrated from 0 to 300 millimeters Hg.

The equipment is mobile and can be used in hospitals or offices very easily. It offers the most accurate determination of systolic pressure of any equipment we have ever used and the accuracy of the charting is extremely close and in several tests which we have repeated, having been done first by the "manual technique," as opposed to the continuous recording technique, we have seen changes otherwise missed.

The Funkenstein test has great usefulness in our experience. We feel that 85% of the 2,000 tested show clear indications as to what type of therapy is indicated. With more and more use of psychopharmaceuticals and with perhaps less resource to the physiological treatments such as insulin coma and electro shock therapy, the need for diagnostic acumen is still important.

We feel that the test should be more widely used, and by correct interpretation many patients will be directed into the proper line of treatment and thereby avoid unnecessary exposure to ECT or insulin coma, tranquilizers or energizers, unless they are indicated by the physiological responses of the patient's autonomic nervous system.

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1. R. I. Med. J., 40 : p. 96, Feb. 1957.
2. "Blood-pressure follower for continuous blood pressure recording in man." J. Physiol. : 130 : p. 37P, 1955.

FUNKENSTEIN TEST

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: May I be allowed to comment on the recent exchange of letters in your correspondence column in regard to the Mecholyl (Funkenstein) test.

The crux of the issue surely is the meaning of this test in the light of current knowledge, and here the weight of evidence must be considered to be against the original empirical proposition that the blood pressure responses to mecholyl are meaningfully related to the clinical status of psychiatric patients or their prognosis.

One may summarize this evidence by pointing out the following. First, a considerable number of studies dealing with the question of the prognostic value of the test have not been able to confirm that any relationship exists between the mecholyl test response and prognosis, or produced contradictory and mutually irreconcilable findings. Secondly, as we have shown (J. Nerv. & Ment. Dis., November 1958), the blood pressure responses to mecholyl vary from day to day even when the test is administered to the same patient by the same investigator and under similar experimental conditions. In our series, in which the mecholyl test was administered by the same investigator to individual patients on 4 different days within a period of one week, only in 8 such 4-test series

out of 54 were the response patterns consistently identical throughout the 4 tests. Thirdly, as we have also shown in the same study, the blood pressure responses to mecholyl are actually dissimilar in a significant number of instances when read simultaneously from the right and left arms by two independent observers. One also ought to note that some mecholyl test responses are indeed such as to be unclassifiable into any of the usual response patterns (see among others, *Canad. M.A.J.* 77: 116, 1957). The addition of an epinephrine test, which for all one knows may be equally variable, cannot conceivably alter the conclusions to be drawn from this evidence.

The acceptance of the Mecholyl test places a heavy burden on the psychiatrist. If he repeats the test for reassurance, he will find that the results many augur a different prognosis for his patient from one day to another even before treatment of any kind is instituted, and that, furthermore, the patient's right sided readings may point to a good prognosis while the simultaneously read left sided response may indicate just the opposite.

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NEWS AND NOTES

DR. FREDERICK W. SEWARD.—Dr. Seward, former owner and director of the Interpines Sanatorium, established by his father in 1890 and closed in 1958, died at his home in Goshen, N. Y., March 4, 1960. He was a graduate from the N. Y. Homeopathic Medical College (1898) and was a former president of the N. Y. State Anti-Saloon League, and had been an active campaigner in the cause of Prohibition. He had been a fellow of the American Psychiatric Association.

1960 RESEARCH AWARD ANNOUNCEMENT.—The National Mental Health Research Fund of the Canadian Mental Health Association announces the second annual Research Award of approximately \$22,000 available this year. It is the intention to award this amount to one research scientist in whose name it will be held and paid as a guaranteed monthly stipend over a 2 to 4 year period.

Applications are invited from persons in Canada with appropriate scientific qualifications in any of the professional disciplines directly related to mental health or mental illness. Applications should be made by informal personal letter setting forth the major research interests as well as the scientific background of the applicant, and should be sent not later than May 31st, 1960 to The Director, National Mental Health Research Fund, Canadian Mental Health Association, 11½ Spadina Road, Toronto 4, Ontario.

THIRD WORLD CONGRESS OF PSYCHIATRY.—Under the auspices of the Canadian Psychiatric Association and McGill University, the Congress will be held June 4-10, 1961, in Montreal, Canada. English, French, German, and Spanish will be the official languages. The program has been designed to include the many vital interests in psychiatry today. Those wishing to present papers should communicate with the General Secretary, Dr. Charles A. Roberts, Allan Memorial Institute, 1025 Pine Avenue West, Montreal 2, P. Q., Canada. A Second An-

nouncement, to be released in September, 1960, will contain information about scientific films, registration, and accommodation

DR. OVERHOLSER HONORED.—Dr. Overholser, Superintendent of Saint Elizabeth Hospital, Washington, D. C., was one of five to receive the President's Award for Distinguished Federal Civilian Service, the highest award the United States can give its career civil servants. Dr. Overholser was presented with the gold-medal award by President Eisenhower at the White House on March 8.

CUTTER LECTURER AT HARVARD.—Dr. Benjamin Pasamanick, professor of psychiatry and research director of the Columbus Psychiatric Institute and Hospital, has been named the Cutter Lecturer in Preventive Medicine for 1960 at Harvard University. He is the first psychiatrist appointed to the lectureship established in 1909 in the will of the late Dr. John Clarence Cutter. Dr. Pasamanick will give two lectures on May 4 and 5 on epidemiologic approaches to the investigation of childhood neuropsychiatric disorder.

ANNUAL WORKSHOP IN PROJECTIVE DRAWINGS.—The workshop, conducted by Emanuel F. Hammer, Ph.D., and Selma Landisberg, M.A., will be held at the New York State Psychiatric Institute, New York City, from July 25 to 28. The suggested text for preparation is *The Clinical Application of Projective Drawings*, Charles Thomas, publisher. Further information may be obtained from Miss Selma Landisberg, 166 East 35th Street, New York 16, N. Y.

INSTITUTE FOR THE STUDY OF CRIME AND DELINQUENCY.—The formation of the Institute, 605 Crocker-Anglo Bank Building, Sacramento 14, California, has been announced by its new president, Richard A. McGee, Director, California Department of Corrections. Its first project is the International Survey of Correctional Practice and

Research, under the direction of Dr. Clyde E. Sullivan, with offices at 300 Mercantile Building, 2052 Centre Street, Berkeley 4, California.

AFTERMATH OF A FIRE ON A GERIATRIC WARD.—A 20% increase in death rate during 3 months following a fire on a geriatric ward of Topeka State Hospital is reported by Dr. D. R. Aleksandrowicz of that institute. In the emergency, most of the patients had been transferred temporarily to a vacant ward, those remaining being placed in other services. No physical injury to any patient resulting from the fire or evacuation was observed, and regular medical and nursing care was assured. It was thought that disruption of milieu and separation from familiar patient groups, personnel, and environment together with changes in routine and associated emotional reaction of personnel might be factors in the increased mortality. The patients involved were all suffering from advanced organic brain syndromes. These experiences emphasize the emotional needs of geriatric patients and the special features of nursing care they require; and it is suggested that on such a service the mortality (possibly also the morbidity) may be an index of emotional tension within the staff-patient community.

CANADIAN MENTAL HEALTH ASSOCIATION.

—The Canadian Mental Health Assembly and 42nd annual meeting of the Canadian Mental Health Association will meet June 2-4, 1960, at the University of Alberta's Banff School of Fine Arts. Expected participants include Prof. Jas. Tyhurst of UBC, Prof. Paul Lemkau, Johns Hopkins U., Rev. Noel Mailloux, Dr. Keith Yonge, U. of Alberta, Miss Vivian Acord and Joseph R. Brown, Indiana Association for Mental Health, and Lawrence Linck, National Association for Mental Health. Further information may be obtained from the Conference Secretary, Canadian Mental Health Association, 11½ Spadina Road, Toronto 4, Canada.

ALDOUS HUXLEY APPOINTED SLOAN VISITING PROFESSOR.—Aldous Huxley, for the past

year professor-at-large at the University of California, Santa Barbara, arrived at the Menninger Foundation School of Psychiatry, Topeka, Kansas, on March 15 to assist with the teaching of psychiatric residents for about 6 weeks. He is the twelfth visiting professor at Topeka provided for by a grant from the Alfred P. Sloan Foundation to The Menninger Foundation.

AMERICAN ACADEMY OF GENERAL PRACTICE.—Dr. Ruth B. Freeman, president of the National Health Council, announced the Academy's election to membership in the Council. The more than 26,000 Academy members, all of them physicians in the general practice of medicine and surgery, join the 70 other member organizations in the Council to work for health protection and improvement.

GALESBURG STATE RESEARCH HOSPITAL.—The 10th Anniversary Symposium on "Research Approaches to Psychiatric Problems" will be held October 21-22, 1960. The Symposium will survey many currently promising biological, psychological, and sociological methodologies relevant to the problems of mental health. Interested prospective participants are invited to communicate as soon as possible with Thomas T. Turlentes, M.D., Superintendent.

SYMPOSIUM ON THE PSYCHOPHYSIOLOGICAL ASPECTS OF SPACE FLIGHT.—Outstanding authorities in psychiatry, physiology, endocrinology, and engineering will give papers at the forthcoming symposium on "The Psychophysiological Aspects of Space Flight." Sponsored by the School of Aviation Medicine, the meeting will be held at the Aerospace Medical Center, San Antonio, Texas, May 26-27, 1960. Southwest Research Institute is handling the arrangements. Lt. Col. Bernard E. Flaherty is the symposium chairman. The symposium proceedings will be published in the book form later this year. Further information may be obtained from Jack Harmon, Symposium Coordinator, Southwest Research Institute, P.O. Box 2296, San Antonio 6, Texas.

TRAINING IN MANAGEMENT OF PSYCHIATRIC PROBLEMS OF CHILDREN.—Boston University School of Medicine, Department of Psychiatry, in cooperation with Boston City Hospital, Department of Pediatrics, announces a training program in the management of emotional problems of children. The course is part-time and designed for practicing pediatricians and for all practicing physicians who are interested in problems of childhood. It is made possible through a grant from the Public Health Service, for training of physicians in psychiatry. For further information write to Box 1, Boston University School of Medicine, 80 East Concord St., Boston 18, Mass.

ARGENTINE SOCIETY OF PSYCHOSOMATIC MEDICINE.—The Society announces the appointment of a new governing board. The newly elected president, Dr. Mauricio Kno-

bel, is an APA member. The aims of the society, which meets monthly in Buenos Aires, is to encourage an exchange of scientific ideas throughout the world. Contacts should be made to Sociedad Argentina de Medicina Psicosomatica, Honduras 4135, Buenos Aires, Argentina.

SOCIETY OF BIOLOGICAL PSYCHIATRY.—The annual meeting of the Society will be held in Miami Beach, Florida on June 11-12, immediately preceding the clinical meeting of the American Medical Association. An interesting program has been arranged and the Academic Lecture will be given by Hans Hoff, M.D., Professor and Head of the Department of Psychiatry of the University of Vienna.

He has chosen for his subject: "The Role of Biological Treatment in Comprehensive Psychiatric Management."

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.

The American Board of Psychiatry and Neurology, Inc., and its Committee on Certification in Child Psychiatry, announce the certification of the following as Diplomates in Child Psychiatry.

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OCTOBER, 1959

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FINE THREADS

A man bade a spinner spin fine threads. The spinner span fine threads, but the man declared that the threads were not good and that he wished the very finest of fine threads.

The spinner said, "If those are not fine enough for you, then here are some others that will suit you." And she pointed to a bare spot.

The man declared that he could not see them.

The spinner replied, "The fact that you cannot see them proves that they are very fine; I can't see them myself."

The fool was rejoiced, and ordered some more of the same thread, and paid down the money for it.

—TOLSTOY
(who was also looking
for fine threads).

BOOK REVIEWS

SYMPOSIUM ON SCHIZOPHRENIA. Edited by L. Lopez-Ibor. (Madrid: Consejo Nacional De Investigaciones Cientificas, 1957, pp. 398.)

In this volume are published the lectures given at the Symposium on Schizophrenia held in 1955, at the Neuropsychiatric Clinic of the Madrid General Hospital, and sponsored by the National Research Council. It is edited by Dr. Lopez-Ibor, Head of the Clinic and initiator of the symposium. It is unfortunate that only the lectures are published; it would have been desirable to present the discussions as well. The volume contains 24 papers, delivered by 20 authors, of whom 8 were invited from outside of Spain: 2 Portuguese, one French, 2 Germans and 3 Swiss.

It is not possible, in this review, to summarize all 24 chapters. There is a wide range of content and also of quality, though most of the papers are of high calibre. Interesting for the American reader is that this volume gives clear information about the current trends of thought of the official psychiatry in Spain, of which so little is known in this continent.

Since the beginning of this century, Spanish medicine has been strongly influenced by Germany and this impact has been strongest on psychiatry. This symposium clearly shows that this adherence still persists very strongly. As an example it could be mentioned that neither E. Minkowsky nor Sechaye are quoted by any of the Spanish authors. Only the 2 French speakers invited, H. Ey and Ch. Durandt give credit to these authorities.

As shown by this book, contemporary academic psychiatry in Spain—with some exceptions—is descriptive, phenomenological and existential anthropological, closely following Jasper, K. Schneider, Wyrsh and Biswanger. No interest is shown in psychodynamics or genesis of symptoms. Schizophrenia is conceived as a "psycho-organic" process, a "somatosis" of endogenous origin. The basic manifestation is a "disturbance of the activity of the self," in terms of "being-in-the-world" that expresses itself by alterations of the emotional life which later become fixated in personality disorders (L. Ibor). Characteristically the only contribution devoted to psychotherapy is a chapter written by Ch. Durandt, the Director of "Les Rives de Prangins," Switzerland. There are, however, 4 dealing with the biological

and physical treatments, including leucotomy and its technique.

As it is inevitable in such a collection, there is much overlapping and repetition. The reviewer feels that much of this could have been avoided if some of the authors could have indulged less in theoretical discussions and speculations of the literature, and concentrated in the discussions of their own opinions and conclusions as based on objective facts derived from their personal observations and research.

The non-Spanish psychiatrists are among the best known leaders of continental psychiatry; though all their contributions are very valuable, they deal with their already well known points of view, without adding anything essentially new to their conceptions. Two contributions to this symposium by Barahona and Polonio, both from Lisbon, should be mentioned; they deal respectively with acute schizophrenia, and with the different types of evolution of the psychosis.

The typographical presentation of the book is good. Unfortunately the great number and kind of misprints makes the reading at times very disturbing, for instance "chronic" instead of "clonic," "fusion" for "function" and so on. In addition to the general index of chapters, there is an excellent index of subjects and another of the authors quoted in the text.

On the whole, this is an excellent book that gives a quite complete idea about how the problems of schizophrenia are approached by an important group of European psychiatrists. Both the National Research Council of Spain and Dr. Lopez-Ibor deserve appreciation for the service rendered.

M. PRADOS, M.D.,
Montreal, P. Q.

INTERNATIONAL REVIEW OF CRIMINAL POLICY,
No. 13, OCTOBER 1958. (United Nations
Publication.)

This volume contains another topical bibliography of current technical literature relating to the prevention of crime and the treatment of offenders. It is the most exhaustive review of its kind and its value is augmented by the inclusion of an author index.

The remainder of this issue deals with the question of prostitution. There are authoritative accounts of the existing situation in a number of selected countries.

K. G. GRAY,
Toronto, Canada.

DR. KELLY OF HOPKINS. By *Audrey W. Davis.* (Baltimore : The Johns Hopkins Press, 1959, xii + 242 pp. ills. \$5.00).

Dr. Kelly was one of "The Four Doctors" who founded the Johns Hopkins School of Medicine, that opened its doors to students in 1893. Kelly was the youngest of the four, Osler the oldest. The first class included 15 men and 3 women, the Hopkins being the first school in the United States to admit women. By 1893 the faculty had grown from 4 to 15.

The original four—in order of appointment, Welch (pathology), Osler (medicine), Halsted (surgery), Kelly (gynecology)—have been immortalized in Sargent's splendid painting that hangs in the Welch Medical Library at the medical school.

It is a singular fact that ample biographies of the first three of the founders were written long ago, also biographies and autobiographies of numerous others of the early Hopkins staff ; Kelly alone, until now, had remained without the story of his life being told in book form. This is all the more remarkable because he was the most spectacular of the great Four and one would have thought that because of the unique features of his personality and his life he would have been the first to attract a biographer.

But Kelly had chosen the one who would tell his story, and one peculiarly suited to do so. Miss Davis was for twenty years his invaluable secretary, friend and collaborator and to her he bequeathed his private papers and the note books he had filled with his experiences and observations over the years. Besides there were the day-to-day conversations from which she quotes freely, as well as from a rich correspondence, the Hopkins archives and other sources. The result is a fascinating book. Writing it was a labor of love. In her pages Dr. Kelly still lives.

He was a born naturalist. From early boyhood he had ranged far and wide over the country collecting and studying specimens of all kinds, his chief delight being reptiles. He had wished to spend his life as a student of nature but yielded to his father's influence and turned to medicine as the more useful, not to say remunerative career. He remained, however, a devoted naturalist by avocation throughout his life.

From the first in his years of practice Kelly's main interest was gynecology, and here his exceptional talent was promptly apparent. He was but 31 years old and only 7 years out of medical school when he was called from Philadelphia to Baltimore to head the depart-

ment of gynecology at the new medical school of the Johns Hopkins University ; and here he developed an unequalled operative pattern that made him famous throughout the world. So great was the demand for his services that he was obliged to establish a private hospital of his own near his residence to accommodate the patients that thronged to his clinic.

After 30 years as professor of gynecology he retired from the medical faculty, but continued with his numerous private interests, writing, lecturing, traveling and exploring nature and stocking his private museum and library. He performed operations until his eightieth year.

Kelly believed that the labourer is worthy of his hire and he was the only one of the Four Doctors who made money by practicing his profession. Rich patients were charged high fees—the standard figure for an obstetrical case was \$500—but he also tempered the financial wind to the shorn lamb, and he refused no patient who could not pay. His charities of many kinds were extremely large. Not long after the medical school opened, expanded facilities became necessary, especially in the gynecological department. To meet this need Kelly wrote his personal cheque for \$5,000 ; sometime later another contribution of \$10,000. He gave several thousand books to the medical library. To illustrate his books he brought the distinguished German artist, Max Broedel to the Hopkins, and was thus responsible for establishing the first department of medical art with Broedel the first professor in the world of such a department.

The full title of Miss Davis' book is Dr. Kelly of Hopkins, Surgeon, Scientist, Christian. This may seem an extraordinary caption, but it is safe to assume that it is as Dr. Kelly would have had it. It is not impossible that he may have suggested the subtitle. It would be difficult to conceive of four giants of medicine, brought together to collaborate in launching a great medical school and hospital, each of whom differed so strikingly from the others in personal characteristics ; and yet whose separate undertakings fitted so congenially together in pioneering the heroic age of medicine, who glorified in each other's achievements, and as the years wore on manifested such strong mutual affection. But Kelly's personality contrasted with that of each of the other three particularly in his conspicuous, even obtrusive religious habits and practices. If ever there was a "God intoxicated" man it was Howard Kelly. Christian doctrine and belief had become an overmastering influence in his life from boyhood on. He recalled a youthful ex-

perience during an interlude in his medical course, spent on a western ranch. On a winter's night, bedfast with snow blindness in the course of a three-day blizzard "there came as I sat propped up in my bed an overwhelming sense of a great light in the room and of the certainty of the near presence of God, lasting perhaps a few minutes and fading away, leaving a realization and a conviction never afterward to be questioned, . . . a certainty above and beyond the processes of human reason."

On the night of the day he graduated in medicine the young physician noted in his diary: "I dedicate myself—my time—my capabilities—my ambition—everything to Him. Blessed Lord, Sanctify me to Thy uses. Give me no worldly success which may not lead me nearer to my Savior."

Later, at the Hopkins his religious views were so contrary to those prevailing among the staff that his colleagues wondered how so brilliant a man could harbor such beliefs. Finally they gave it up; he was an enigma. Kelly began and ended every day with an hour of bible study and prayer. "Never," writes his biographer, "did Kelly pick up a scalpel without prayer that his hand be guided. . . ." Riding in a taxicab, when halting at a red light he would introduce some earnest remarks with "Cabby, I hope when you and I come to the gate of heaven, the light will be green."

Dr. Kelly died in January 1943 six weeks before his eighty-fifth birthday. He was the last of the Four Doctors to go. His last words: "My Bible, Nurse, give me my Bible." There seems to be no question that he firmly believed in immortality. In his last textbook, *Gynecology*, finished at the age of 70, Kelly wrote: "My pleasant task is done; the shadows fall well aslant my page; it is almost time to draw the curtains and turn on the Great Light."

Dr. Kelly's seventy-fifth birthday was the occasion of a great gathering of his friends and colleagues for a testimonial dinner. Welch, the only other survivor of the immortal Four, lay mortally ill in the Johns Hopkins Hospital. He sent a letter, one of the great letters of all time, in which he happily and touchingly reviewed "forty-four years of our uninterrupted association, friendship and affection and love." And then, as part of his tribute, "I have always felt, as did Osler, that you did more than any of us to extend the fame of the Johns Hopkins University to distant parts; and the hospital offered no greater attraction than the opportunity to see you and your work, and the new

methods which you were so rapidly developing."

A year later Welch was gone. Speaking of his cherished friend Kelly said, "It is very sad and strange that at the end, Christian faith demands some expression of hope. He was so lovable that I hope some light entered before the end." (!)

C. B. F.

CLINICAL STUDIES IN CULTURE CONFLICT.

Edited by Georgene Seward, Ph.D. (New York: Ronald Press Co., 1958, pp. 598. \$7.00.)

This book is a product of the University of Southern California, where Dr. Seward is associate professor of psychology. It is a sequel to the editor's *Psychotherapy and Culture Conflicts* (New York: Ronald Press, 1956), in which she presented the principle psychological differentials among certain ethnic groups. The current volume illustrates in greater length and detail how these psychological factors influence personal-functioning and psychotherapy.

Consisting of a series of case studies involving conflicts associated with ethnic minority groups, this work shows the value of a multidisciplinary approach to current problems in the social sciences. There are 22 chapters, written by 20 clinical psychologists, 3 psychiatrists, and 2 anthropologists. In order to integrate the material the editor has written a brief preview and postscript for each of the 5 major sections. Part One has an introductory chapter by the editor, in which she discusses various personality features and culture conflicts; the second chapter is devoted to methods of diagnostic evaluation and testing. Part Two, a collection of case studies relative to the Negro's role in this country, presents the Negro as having the greatest problems and the most extreme form of ambivalence because he lacks a specific sub-culture of his own. Part Three deals with the American Indian, while Part Four treats of the various groups having a Spanish legacy, such as Mexican-Americans, Puerto Ricans, and Filipinos. Part Five is devoted to the Japanese-American, and the concluding part deals with the Jews and Armenians of European background.

The book strongly suggests that the human raw material does not differ with culture or sub-cultures, but that each individual culture tends to select and develop certain aspects of the total potential personality. It is emphasized that the therapist must increase his sophistication about cultural backgrounds in order to give the best care to his patients.

Psychotherapists of all schools of thought will find this work helpful in the specific areas mentioned above.

ERIC T. CARLSON, M.D.,
New York Hospital-
Cornell University
Medical College.

DER GANGSTER. By Hans von Hentig. (Berlin : Springer-Verlag, 1959, pp. 245. DM 19.80.)

Dr. von Hentig is a psychologist-sociologist, and in the present volume offers a criminal-psychological study of the American gangster. It is a fascinating book, and at the same time a shocking one. The political and social corruption that makes the gangster possible is revealingly uncovered in these pages, although this is by no means the main task of the author. It sounds, or rather, reads even more depressingly in German than it does in English, that one gangster "In 44 Jahren seines Lebens war der Gangster 44mal verhaftet worden und jedesmal freigekommen" (p. 220). This is a familiar pattern. Our outmoded penology, and our antiquated approach to the criminal are painfully apparent when one reads a book like this. But Dr. von Hentig's purpose is not to reform but to understand—an indispensable condition or prerequisite for anyone interested in reform, and so his inquiry is aimed principally at discovering the characteristics of the gangster. He considers the genealogy of the gangster, his cultural milieu, his women, the functions and operations of the gangster, his defensive techniques, his bodybuild, his so-called primitive drives, his infantilism, his intelligence and related traits, his superstitions and symbolic behavior, attitudes toward death, and the like.

Dr. von Hentig occasionally falls into some unexpected naivetes, as in his belief in "throw-backs" and "atavisms," beliefs which belong in the same class as "phlogiston" and "ghosts." In fact, there is a little too much of this, and this rather spoils an otherwise valuable book. It is not going to help us very much to be told, as Dr. von Hentig finally concludes, "This, then, is the gangster. A manicured savage, clothed by the best of tailors. The cannibal with the cadillac. The Stone Age Man in our midst, the barbarian in his deepest heart, and the beast of prey in his blood." Nevertheless, Dr. von Hentig has written a socially, if not psychologically, valuable analysis of one aspect of the contemporary social scene.

ASHLEY MONTAGU, PH.D.,
Princeton, N. J.

GROUP PSYCHOTHERAPY: THEORY AND PRACTICE. 2nd. Ed. By J. W. Klapman. (New York : Grune and Stratton, 1959, pp. 281. \$6.75.)

The second edition of this useful book is a comprehensive, well balanced survey of the history, current theoretical concepts and major forms of practice of group therapy. About a third of the book is devoted to an historical survey and review of theoretical concepts. The latter are drawn chiefly from psychoanalysis and group dynamics. The remainder describes all the major current forms of group therapy. Each method is fairly presented, with supportive illustrations. They are arranged roughly in terms of amount of directiveness, on the assumption that this parallels the degree of disorganization of the patients for which each is most suited. The more disorganized the patient, the more explicit the direction he needs. Two brief chapters at the end, which give the impression of being tacked on for completeness, consider assessment of the results of therapy and milieu therapy. The former is hopelessly inadequate; the latter, though brief, is sufficient in view of the fact that many aspects of milieu therapy had been treated in earlier chapters.

Perhaps the outstanding feature of this book is its general good sense. The author rightly maintains that successful psychotherapy must engage intellectual as well as emotional aspects of the patient's personality and stresses the re-educative aspect of all forms of psychotherapy. While there is nothing in the book that is startling, original, or incisive, neither is there anything that is biased or unfair, and the author's wide clinical experience is evident in his evaluations throughout. There is an adequate bibliography.

This book will be of the greatest use for persons who desire a sound general orientation to the field of group therapy. In its unpretentiousness, good common sense and clinical acumen, it is a fitting monument to its author.

JEROME D. FRANK, M.D.,
Baltimore, Md.

MOTIVATION: A SYSTEMATIC REINTERPRETATION. By Dalbir Bindra. (New York : Ronald Press, 1959, pp. 361. \$5.50.)

For the clinical psychiatrist it is likely that only a few parts of this book will be of interest. The chapters on the nature of the problem of motivation, on motivational phenomena and on human motivation present the theoretical and experimental issues of the subject in a terse, condensed way. For the theoretician an ex-

perimental psychologist or psychiatrist the entire book offers a resumé of the data and arguments in a manner which is quite useful. The topics, in addition to those mentioned, are on goal direction, the development of motivation activities, an analysis of reinforcers, the factors determining habit strength, the role of sensory cues, arousal and behavior and the role of blood chemistry.

The book is restricted to phenomena that are "purposeful" or "goal-directed"; all old experimental data are reinterpreted in the light of newer hypotheses and the up-to-date experimental data on animals leading to modern theories gives the author the opportunity to evaluate the new theories. He rejects instinct theory and drive theory as redundant descriptions which are not explanatory. He is also dissatisfied with the "neurologizing" of some experimenters.

The attempts at making psychoanalytic theory an overall psychological system did not seem to attract Bindra even though he deals with identical, if not parallel, phenomena. For example, he discusses "functional autonomy" but only the experimental data on animals involved and not the psychoanalytic theory.

Those students and researchers accepting Bindra's approach will find the book most useful as a reference source and as a systematic attempt to clarify the issues; those whose approach is different will have to answer the questions he raises in the polemic part of his book.

NORMAN REIDER, M.D.,
San Francisco, Calif.

A MANUAL FOR EEG TECHNICIANS. By Rhoda Feinstein Milnarich. Foreword by Robert S. Schwab. (Boston, Mass.: Little, Brown and Co., 1958, pp. 222. \$5.50.)

This 222 page book with 83 illustrations fills a gap in an area which has not been covered since Ogilvie's *Manual of Electroencephalography* of 1945. It is written essentially to help the technician become oriented to the job and also improve the technique of taking an electroencephalogram which demands skill and patience. The book explores the difference in the role between technician and electroencephalographer as well as the various methods on taking an EEG. It plods a middle course in areas which are some times obscured by more heat than enlightenment.

The importance of the relationship between patient and technician is given sufficient attention. The chapter on artifacts is especially

helpful and the succinct chapter on electronics provides easily assimilated facts about electrical aspects of the EEG.

A variety of very practical suggestions are given in the book; i.e., what to do and how to describe a seizure during an EEG, how to add to the medical history for the electroencephalographer. A glossary of terms in the back of the book adds to its usefulness. For the beginning technician this book is very helpful and it is a worthwhile addition to the EEG lab.

A. N. BROWNE-MAYERS, M.D.,
New York, N. Y.

GRUPPEN PSYCHOTHERAPIE. By Zerka T. Moreno, et al. (Bern: Hans Huber, 1957. \$4.00.)

This is a series of 20 papers, 5 of them in English. The other 15 are in their original language, mainly German or French. Brief English abstracts are included. The articles are fairly general in interest. The English articles include one by George Bach presenting his field theory which is a variant on Kurt Lewin with considerable elaboration and some rather general illustrations. Nathan Ackerman's paper discusses the historical and social origin of group psychotherapy with some emphasis on the failures of psychoanalysis. Rudolf Dreikurs has an article about the relationship of group psychotherapy to the democratic process which defines the psychotherapeutic group as a relationship between equals. W. Schindler of London is more concerned with the fact that group psychotherapy has strong resemblances to a recapitulation of the original family group and his belief that the transference problems are identifiable in this pattern. Mrs. Zerka T. Moreno presents a paper on case work with psychodrama as utilized with pregnant mothers. Several of the abstracts are intriguing. The German authors have presented several formulations of the dynamics within the group but in general there is little which has not been in the English literature before this time. Both J. L. Moreno and Martin Grotjahn have written papers in German for this periodical but again there seems to be little which differs from their previous formulations.

CARL A. WHITAKER, M.D.,
Atlanta, Ga.

A HISTORY OF EMBRYOLOGY. By Joseph Needham. (New York: Abelard-Schuman, 1959, pp. 304. \$7.50.)

This is the second revised edition of a book originally published in 1931. At that time the

work established itself as the leading *arbeit* of its kind, and now, with the assistance of Arthur Hughes, lecturer in anatomy at Cambridge, the work has been brought up-to-date and enlarged. It is a most welcome revival of a book that has been too long out of print, for it is one of the most readable of books, and certainly the most informative on the subject with which it deals. It is not only a valuable contribution to the history of science, but quite as eminently so an illuminating history of the force with which culture conditions thinking.

ASHLEY MONTAGU, PH.D.,
Princeton, N. J.

THE GROWTH OF LOGICAL THINKING FROM CHILDHOOD TO ADOLESCENCE. By Bärbel Inhelder and J. Piaget. (Translated by Anne Parsons and S. Milgram.) (New York: Basic Books, 1958, pp. 356. \$6.75.)

The first part of this book consists of a series of experiments by Inhelder, each followed by a theoretical analysis by Piaget. The analyses and the final 3 chapters represent an attempt to interpret the experimental (or, rather, observational) data in terms of Piaget's theory of the development of thinking from childhood to adolescence.

The book is not easy to follow for several reasons. In the first place, it presupposes some knowledge of Piaget's earlier work on cognitive development, some acquaintance with his views on the relationship of psychology and logic, and some familiarity with the symbolism of formal logic. There is a helpful introduction by one of the translators which briefly sets the stage for the reader; even so, readers unfamiliar with Piaget's writings will find this a difficult book.

A second difficulty arises from Piaget's use of familiar technical terms in unfamiliar ways. For example, in Piaget's system the term "operation"—a key concept in Piaget's presentation—has a specialized meaning quite unlike that assigned to it in current North American psychology. For Piaget, concrete operations are actions that are "internalized," "integrated with other actions to form general reversible systems," and "accompanied by an awareness on the part of the subject of the techniques and coordinations of his own behavior." The focus of the book is on the transition from reliance on concrete operations, characteristic of children between 7 and 11 years of age, to the utilization of formal operations, apparent in the thinking of adolescents. Whereas concrete operations are related to the logic of classes and relations, formal operations are related to propositional logic. Ability to think in terms of

propositional logic (for example, to recognize what conclusions may be drawn from certain premises) appears, according to the authors, only at about the age of 12 years.

A third difficulty facing the reader is primarily a methodological one. A psychologist accustomed to statistical analyses of experimental findings is likely to feel dissatisfied and baffled by the authors' presentation of data. Each of the first 15 chapters describes an experiment in which the subjects are set a task, the solution of which is based on a simple scientific principle, e.g., the equality of angles of incidence and reflection, the conservation of motion in a horizontal plane. A description is given of the behavior of subjects at various stages of development, illustrated by sample protocols. One cannot tell, however, how many subjects were tested at each age level; nor is there any clear indication of the amount of variability found among children of any one stage of development. Consequently, there are problems in interpretation. One may suspect, for example, that differences between Piaget's stages of development are not as clear-cut as the book sometimes seems to suggest. The data, as presented, do not allow the reader to check suspicions of this kind.

The importance of the book resides largely in Piaget's presentation of a set of logical schemata to assist in the study of thinking as a psychological process. Since it concentrates on the stage of development at which formal operations first appear, the book allows Piaget to expound and illustrate his system more fully than he has done elsewhere. Moreover, the ingenious series of studies by Inhelder can hardly fail to stimulate further research and to lead to an increased interest in Piaget's attempt to provide a theoretical framework for the study of thought processes.

RICHARD H. WALTERS, PH.D.,
University of Toronto.

THE ORIGIN OF SPECIES. By Charles Darwin. Edited by Morse Peckham. (Philadelphia: University of Pennsylvania Press, 1959, pp. 816. \$15.00.)

This year, 1959, is the centennial of the publication of Darwin's *Origin of Species*, a centennial which is being celebrated all over the civilized world. During Darwin's lifetime 6 editions of the work were published, and while it was known that the author had made many changes between the first and the sixth edition no one really had an idea as to how extensive these changes were. This lacuna is now filled by Professor Peckham's prodigious industry. We have now, for the first time, a

complete variorum text in which variants down to a single comma are recorded from edition to edition in such a manner that within a few minutes the inquirer is able to determine how any particular word or sentence varies from edition to edition. The text of the *Origin* is not here, that would have swelled the volume to enormous dimensions, but anyone having a copy of any edition of the text can use Professor Peckham's admirable work to check on the changes. To students of the mind of Charles Darwin and his development, as well as to scholars of Darwiniana and Darwinism the book will be invaluable.

ASHLEY MONTAGU, PH.D.,
Princeton, N. J.

WE CALL THEM CRIMINALS. By Ralph S. Banay. (New York: Appleton-Century-Crafts, Inc., 1959, pp. 291. \$3.95.)

Presenting the complexities of criminal behavior as illuminated by the motivational insights of dynamic psychiatry in a short, readable book, is an impossible task. Doctor Banay tackles it with courage, conviction and a wealth of experience in the correctional field. He reviews for his lay reader such characteristics of our culture as the preoccupation with violence and the movement toward a matriarchy. He gives a short course in the vicissitudes of child rearing and an introduction to general psychodynamics. Alcoholism is singled out for special attention because of its contribution to antisocial behavior. The theme is that man is manifestly weak, finite and fallible. Each individual has antisocial impulses that are normally held in control. Criminal behavior represents a surrender to human defects and frailty. Very little crime is attributed to mental illness as such, but is the result of a violent aggressive discharge in an emotionally unstable individual. A series of short interesting case histories is used to illustrate the above. Treatment techniques are dealt with extremely briefly in a chapter entitled, "Uses and Abuses of Brain Washing." I would have personally preferred a more straightforward presentation

of treatment without the easily misunderstood analogy.

The final chapter, "A Program for the Future," is a good authoritative statement of perhaps the most popular approach of psychiatrists to the penal problem. It recommends abolition of prisons as such with their obsolete philosophy, frame of reference, physical plants and personnel practices. In their stead, two types of institutions should be planned. One would be a protective work colony for the untreatables and the other would be a full-fledged therapeutic institution blending characteristics of hospital, school and workshop.

While one can take exception with Doctor Banay about his model for criminal behavior and his recommendations for correction, there certainly can be no disagreement with his desire to force the general public to consider the intricacies of motivation of criminal behavior.

FRANK T. RAFFERTY, M.D.,
Salt Lake City, Utah.

THE TEACHING AND LEARNING OF PSYCHOTHERAPY. By Rudolf Ekstein, and Robert S. Wallerstein. (New York: Basic Books, Inc., 1958, pp. 334. \$6.50.)

This book represents the distillation of nearly 10 years of experience in teaching psychoanalytic psychotherapy at The Menninger School of Psychiatry. The focus throughout is upon teaching and learning psychotherapy, a human enterprise which takes place within the limitations imposed by the fallibility of teacher, student, patient, administrator, and the sociopolitical structure of the training situation. In keeping with the title, examples from different points in the treatment-supervisory process are presented and are diagnosed and discussed in terms of problems in the teaching and learning of psychotherapeutic skills.

This important and well-written work terminates with a carefully selected bibliography on training in the different clinical disciplines.

BERNARD LUBIN, PH.D.,
Indianapolis, Ind.

IN MEMORIAM

RICHARD SHERMAN LYMAN

1891-1959

Dr. Richard Sherman Lyman, former Chairman of the Department of Neuropsychiatry, Duke University School of Medicine, died at his home in Montclair, N. J. on June 13, 1959, at age 68. A descendant of Richard Lyman, one of the founders of Hartford, Connecticut, Dr. Lyman was born into a Hartford family long noted for their mathematical and musical ability. He graduated from Yale in 1913; then enrolled at M.I.T. as a sanitary engineer, leaving before graduation to join a Red Cross typhus unit in Yugoslavia. He entered Johns Hopkins University School of Medicine in 1915, withdrew at the end of his second year to enlist in the Army Air Corps. Two years later he returned to medical school, earning both Phi Beta Kappa and Alpha Omega Alpha keys and graduating in 1921. He interned at Henry Phipps Psychiatric Clinic, then continued training at Brouwer's clinic in Amsterdam and at Queens Square Hospital in London as a clerk of Gordon Holmes.

Returning to this country, Dr. Lyman was appointed the first Associate Professor of Medicine at the newly organized medical school in Rochester, New York. In 1930, he attended Speilmeyer's clinic in Munich. A polyglot who spoke Russian and German without an American accent, Dr. Lyman was also one of the few Americans to have been an associate of Pavlov, at the Institute of Experimental Medicine in Leningrad. He then served at the Red Cross Hospital in Shanghai during the Sino-Japanese War of the early 1930's. During the next 5 years, as Associate Professor of Neurology and Psychiatry at Peking Union Medical School, Dr. Lyman established the first modern psychiatric hospital under the auspices of the college; developed the first tests for aphasia in Chinese, and compiled the first treatise on ethnologic neurology and psychiatry (Peking, Henri Vetch, 1939). Many of his important contributions, including

negation of Pitres' "law of regression,"¹ were published in the *Chinese Medical Journal*.

On returning to the United States in 1937, he was appointed Lecturer at Johns Hopkins University School of Medicine, where he collaborated with Dandy on the use of the EEG as a diagnostic aid in locating brain tumors, and penned the first paper on eye movements and the EEG. Dr. Lyman maintained a close association with Adolf Meyer; but did not wish to succeed him as Henry Phipps Professor of Psychiatry, considering himself far too individualistic.

Finally in 1940 he accepted the post of first Professor of Neuropsychiatry and Chairman of that Department at Duke University School of Medicine, the first professor of neuropsychiatry in North Carolina. His department was subsidized out of his own pocket to finance noted guest lecturers from all over the world as part of his residency training program. Dr. Lyman purchased the Scholz neuropathological collection and gave it to the Armed Forces Institute of Pathology via Webb Haymaker.

He took a leave of absence from Duke to serve in Washington, D. C.; Ceylon; and China as a major in the Office of Strategic Services. Many of his experiences were later compiled as a section in *Assessment of Men* (Rinehart, 1948)—the selection of highly qualified personnel for O.S.S.

After resigning from Duke in 1951, Dr. Lyman became Visiting Professor of Neuropsychiatry at Meharry Medical College in Nashville to spearhead the foundations for a department. Following his retirement in 1955, he moved to Montclair.

For many years Dr. Lyman was a con-

¹ Pitres assumed that the earliest learned or the most fluent language was always the one least affected or first to recover in aphasia. However, Lyman was able to demonstrate that language structure itself is a more crucial factor—those languages allowing better connections with intact auditory and motor-speech functions showing less impairment.

sultant and advisor in the Veterans Administration teaching program. Among the many organizations to which he had belonged were the American Psychiatric Association, American Neurological Association, Chinese Physiological Society, and Sigma Xi. He was certified in both neurology and psychiatry by the American Board.

An expert craftsman who turned out detailed brain models in colored plastic to supplement his teaching, Dr. Lyman was one of the first psychiatrists in this country to compile a library of coordinated tape recordings and movies or film strips of important teaching cases, both in neurology and psychiatry, beginning in the 1930's. This is one of the most extraordinary and complete libraries of its kind. His perfect pitch enabled him to analyse tape recordings of the most subtle deviations with aphasic patients.

Unfortunately, due to modesty, his many other accomplishments were little known outside of a relatively few individuals,

among whom are Tracy Putnam, H. Houston Meritt, John F. Fulton, Webb Haymaker, David McK. Rioch, Daniel Blain, William Sargent, R. Burke Suitt, and Leo Alexander (who was one of those Dr. Lyman "brought over" to this country). He is survived by his wife, Mrs. Katharine R. Lyman, who also served in O.S.S.; a daughter and son by a first marriage; and three sisters.

Of greatest importance in the present climate of doctrinaire putative certainties and conformity was Dr. Lyman's unique philosophy of teaching, original thinking, respect for individuality, and ability to empathize with patients that he tried to pass on to his students.

Perhaps the late Alan Gregg summarized these qualities in a letter to Dr. Lyman: "... You have a gift of stimulating and securing the loyalty of young men that is very valuable indeed."

LEONARD J. RAVITZ, M.D.

THE MODERN TREATMENT OF DEPRESSIVE DISORDERS^{1, 2}FRITZ A. FREYHAN, M.D.³

The era of the modern treatment of depressive disorders started with Cerletti's and Bini's demonstration of the value of electroconvulsive therapy. This method was widely, though not universally, accepted as constituting the most effective, safe and rapid treatment for the various depressive psychoses. With the establishment of an effective therapeutic procedure, psychiatric interest in the affective disorders subsided. Whereas much therapeutic and investigative effort was centered on problems of schizophrenia and the psychoneuroses, the knowledge on questions of epidemiological, pathogenetic and therapeutic aspects of depressive disorders advanced very little. What compels psychiatrists today to recognize depression as one of the outstanding problems of psychopathology and therapy, is the result of recent developments in psychopharmacology. The search for compounds with potent antidepressive properties has not only produced new drugs but new concepts on etiology. While the research initiative came from the laboratories, the clinicians are once more confronted with many controversial questions on all fronts which had remained unresolved in the past. The McGill University Conference on Depression which was held in Montreal last March (1), demonstrated not only how wide the diversity of psychopathological concepts has remained, but revealed at the same time the astonishing gap between clinical impressions, theoretical assumptions and established facts. The lack of knowledge and agreement on questions of diagnostic differentiation, the limited information on incidence and long-term prognosis and, finally, the conspicuous absence of

valid evaluations of the effectiveness of ECT, of psychotherapy and of various modes of therapeutic management must be remembered if new approaches, whether theoretical or therapeutic, are to be clinically meaningful and scientifically productive.

Perhaps in no other branch of medicine can one find such an extraordinary variance of results with the same therapeutic methods as in psychiatry. Psychiatrists do not commonly share comparable therapeutic experiences since they deal with different patient populations, guided by contrasting conceptual frameworks. The controversial literature on electroconvulsive treatment can serve as one of many examples. ECT has been praised or condemned on clinical, theoretical and aesthetical grounds. Its undeniable benefits have been interpreted from somatic and psychodynamic points of view. The magnitude of its impact on recovery is still a matter of dispute. Kalinowsky writes: "The response of depressions to usually less than 5 convulsions, pharmacologically or electrically induced, is one of the most predictable events in psychiatric treatment" (2). But Manfred Bleuler (3), Kielholz (4), Lewrenz (5) and other continental psychiatrists have always maintained that the ECT-induced disappearance of depressive symptoms is not indicative of an actual change in the spontaneous course of the depression. Although their concept of endogenously determined depressive phases is of great significance for the evaluation of therapeutic procedures, there is little agreement on what constitutes the spontaneous course of a depressive psychosis. It is generally believed, and has been supported by statistics, that ECT has greatly accelerated recovery from depressions. This is reflected in earlier discharges from psychiatric hospitals and institutions.

But the use of hospital statistics for the purpose of demonstrating therapeutic achievements is a most difficult and ambiguous endeavor. To illustrate this, I

¹ Read at Philadelphia Psychiatric Society Meeting, November 10th, 1959.

² This study was supported in part by a grant (MY-2991) from the National Institute of Mental Health, U. S. Public Health Service.

³ Adj. Associate Professor, University of Pennsylvania and Chief, Division of Research, Delaware State Hospital, Farnhurst, Del.

should like to examine data from the records of the Delaware State Hospital. It is the particular advantage of this hospital that it is the only psychiatric hospital for the population of the entire state. Since depressive disorders tend to be periodical and since relapses mean readmission to the same hospital, the hospital's data may well be regarded as being indicative of certain changes during the first 5 decades of this century. The figures represent the total number of female patients with depressive disorders of the manic-depressive variety who were admitted to the Delaware State Hospital in the years 1900-1957. Table 1 shows a division into 3 series: 1. Patients admitted before the introduction of ECT in 1938; 2. Patients admitted since 1938 who received ECT; and 3. Patients admitted since 1938 who did not receive ECT. The figures in each series show the average duration of the first period of hospitalization and the average length of the interval

between first and second admission for those patients who relapsed.

What information can this survey supply? It is evident that the patients admitted before 1938 spent the longest time in the hospital. After 1938, there is a change: the duration of hospitalization decreases for both patients who did and who did not receive ECT. But if only two series had been shown, namely the series before 1938 and the series of ECT-treated cases since then, one may have been tempted to attribute the change solely to ECT.

Equally intriguing are the figures for the length of the interval between first and second hospitalization. Perhaps contrary to expectation, there is a suggestion of shorter intervals since 1938. This would seem to confirm previous reports in the literature which claimed earlier relapses after ECT. Some interpreted this as an indication of some damaging effect. But this seems unlikely since the decrease of the interval

TABLE 1

DURATION OF PERIOD OF FIRST HOSPITALIZATION AND SEPARATION:
CYCLOTHYMIC DEPRESSIONS, FEMALES, 1900-1957

DURATION OF FIRST HOSPITALIZATION		1900-1937		1938-1957 ECT		1938-1957 Without ECT	
Age on Admission		Number Patients	Days	Number Patients	Days	Number Patients	Days
-30		27	204	36	96	33	101
30-49		57	334	78	203	66	84
50-69		28	294	37	184	40	97
70+		1	244	1	159	3	133
Totals		113	<u>292</u>	152	<u>173</u>	142	<u>93</u>

DURATION OF FIRST SEPARATION		1900-1937		1938-1957 ECT		1938-1957 Without ECT	
Age on Admission		Number Patients	Days	Number Patients	Days	Number Patients	Days
-30		18	3054	12	661	18	1874
30-49		24	1987	29	1676	24	1472
50-69		11	1880	16	1425	17	1462
70+						1	246
Totals		53	<u>2327</u>	57	<u>1392</u>	60	<u>1569</u>

appears to be shared by patients with and without ECT.

Perhaps these figures have social implications as well. The long period of hospitalization before 1938 may reflect the conservative, if not anxious, attitude towards psychiatric patients which prevailed at that time. And the longer interval for the first series may not indicate better therapeutic results, but greater hesitation on the part of the families to return the patient to the hospital, whereas the more recent acceptance of psychiatric treatment favored earlier readmissions.

If, for the purpose of therapeutic assessments, patients are used as their own controls, accurate information is needed on all aspects of past illness and treatment. To illustrate the extent to which variation and variability manifest themselves in the course of periodical depressions, I have selected from our Tofranil series those 16 patients who have in common a minimum of 4 depressive phases requiring hospitalization. Table 2 lists, in terms of months, duration of hospitalization (H) and in-

terval (I) for each depression. The table shows furthermore what somatic treatment, if any, the patient received during each period of hospitalization. A case by case examination reveals little evidence of a consistent interdependence between therapeutic methods, length of hospitalization or length of interval. What this illustrates is the fact that variation and variability of clinical aspects of the depressive psychoses in the same person as well as from person to person render difficult the establishment of homogenous groups for comparative purposes. This lesson has yet to be learned by clinicians, research psychologists and biostatisticians who direct psychopharmacological investigations.

It is one of the most important contributions of clinical psychopharmacology that attention has been drawn to the relationship between therapeutic modes of action and specific psychopathological symptoms. For the understanding of the effects of psychotropic drugs, it is by far more informative to relate these effects to particular psychopathological states than to diagnostic en-

TABLE 2

CATAMNESTIC PROFILE OF 16 CYCLOTHYMIC PATIENTS WITH 4 OR MORE ADMISSIONS

No.	Sex	Adm. Age	I		II		III		IV		V		VI		VII		VIII		IX		X	
			H	I	H	I	H	I	H	I	H	I	H	I	H	I	H	I	H	I	H	I
1	F	25	3	222	1	27	1	15	1	4	2	84	2	10	2	6	2	12	2	18	2	2
2	F	37	8	8	9	192	3	17	2	1	8	1	8	2	3	7						
3	F	51	3	22	2	10	3	8	2	31	3	18	2	1	3	4						
4	F	37	1	1	9	120	2	96	5	32	9	18	2	1								
5	M	38	22	147	2	68	2	1	110	2	4	3	11									
6	F	52	2	60	5	36	1	12	1	60	1	1	3									
7	M	33	4	48	21	39	4	38	5	61	18	9										
8	M	34	1	208	1	91	1	23	2	3	1	12										
9	F	55	3	2	4	8	5	8	3	11	4	11										
10	F	67	1	15	1	46	11	2	1	8	4	9										
11	M	58	1	8	1	24	5	70	3	2	7											
12	F	55	7	102	3	65	3	33	5	7												
13	F	38	1	36	4	12	4	94	3	8												
14	M	50	4	66	5	21	2	49	3	1												
15	F	49	2	3	3	12	L 1	84	29	5												
16	F	56	2	42	5	20	3	91	1													

☐ Without ECT
☐ ECT
☐ TOFRANIL
☐ Combined
 L Lobotomy

Status as of March 1, 1959.

tities. A clinical study of drug effects depends on the proper identification of "target symptoms" on which the drug can exert its action. Amphetamines, for example, are commonly prescribed to reduce appetite. The greater majority of patients who take amphetamines for this purpose, do not experience any psychotropic effects. But if prescribed as anorexant for patients with unrecognized symptoms of mild depression, they report, often enthusiastically, a mood-lifting effect as well as an increase in initiative. The same drug, then, exerts its psychopharmacological action primarily in those persons who present in fact a psychopathological target for psychotropic effects.

The present era of antidepressant pharmacotherapy started with the introduction of iproniazid and the concept of "psychic energizers." It is not yet known whether monoamine oxydase inhibition corrects a biochemical deficiency which is assumed to be the cause of depressions. There is no agreement at this time whether the monoamine oxydase inhibiting drugs achieve their antidepressant effects on the basis of MAO-inhibition. Nor has it been proved which biochemical deficiency plays a decisive role in the pathogenesis of depressions in the first place. States of mental depression differ widely in symptomatology, incidence and prognosis. From the clinical point of view, one must, therefore, caution against unitary concepts which concentrate attention on therapeutic agents with one-directional modes of action. It seems unreasonable to expect that the same drug calms the anxious, stimulates the apathetic and inhibits the agitated or self-destructive patient. Pharmacotherapy with antidepressant compounds is still in the exploratory stage. It would be premature to confine clinical studies to particular types of compounds.

OBSERVATIONS WITH ANTIDEPRESSANT DRUGS

The clinical investigations of 5 antidepressant compounds⁴ were carried out by

the Delaware State Hospital's research department. Only hospitalized patients are included in this study. The selection of patients for treatment with antidepressant drugs was based on the diagnosis of a depressive disorder as well as on specified psychopathological symptoms. We distinguish between behavioral, somatic and experiential symptoms. "Behavioral" symptoms refer to observable phenomena such as withdrawal, listlessness, sadness, agitation, self-mutilation, lack of initiative, *etc.* "Somatic" symptoms include disturbances of appetite, sleep and elimination as well as the various functional disturbances which are part and parcel of depressive disorders. The subjective account of the depression, *i.e.* anhedonia, lack of vitality, guilt feelings, ideas of hopelessness, hallucinations and delusions and so on are grouped as "experiential" symptoms. Evaluations are based on changes of the individual psychopathological profile. Daily observational protocols were kept separately by psychiatrists and nurses. All clinical observations whether by nurse or psychiatrist were unsolicited. While rating scales direct the observer's attention to predetermined items, it is the purpose of our protocols to obtain spontaneous observation on the widest possible scale. It is the clinical investigator's task to discover drug effects, to identify variables of action and interaction and to explore the range of clinical effectiveness on the basis of clinical knowledge and experience. The final evaluations reported as "results" reflect a patient's status at termination of treatment regardless of clinical or administrative consequences in terms of further hospitalization or discharge. Therapeutic results are divided into 3 groups: (a) optimal, *i.e.* total disappearance of the target symptoms; (b) partial modification; and (c) failure. As a matter of principle, drugs which are available in ampules are given by injection for about 1 week before oral medication is substituted. One cannot sufficiently emphasize the need for the closest possible supervision of the administration of drugs. Psychiatric patients in general and depressed patients in particular are apt to deceive physician and nurse. The actual administration of drugs is not infrequently the weakest link in otherwise

⁴ We wish to thank Geigy for their generous supplies of Tofranil; Smith, Kline & French Laboratories for SKF 385 and SKF 6270; Warner-Chilcott Laboratories for Nardil and Pfizer Laboratories for Niamid.

highly sophisticated experimental investigations. No other drugs should be permitted during the therapeutic course as it is obviously impossible to explore the effects of a compound without restricting medication to the drug under study.

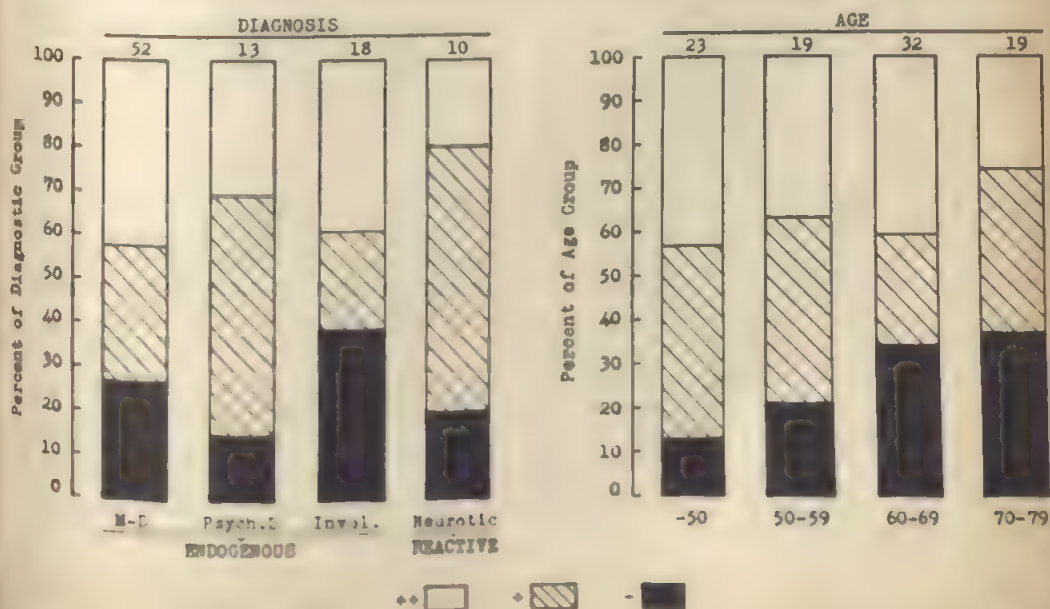
The 5 compounds included in this report fall into 3 pharmacological groups: 1. *The monoamine oxydase inhibitors* represented by nialamide, phenelzine, and a trial preparation SKF 385 (trans-dl-2-phenylcyclopropylamine hydrochloride) which, though structurally related to the amphetamines, is a far more potent inhibitor of monoamine oxydase than iproniazid; 2. Trial compound SKF 6270, a *phenothiazine* (10-(3-dimethylamino-2-methylpropyl)-2-methylthiophenothiazine hydrochloride), which is less potent than chlorpromazine to which it is structurally related; and 3. Imipramine which is different from all other antidepressant compounds since it does not have a stimulating or energizing action and is not a MAO-inhibitor. The pharmacological uniqueness of imipramine is of special significance since on one hand its action cannot be explained in terms of enzyme inhibition, while on the other hand it appears

to be the most effective antidepressant drug which is now available.

Our investigations of the antidepressant properties of imipramine, now known as Tofrānil, commenced nearly 2 years ago. The results of this investigation have been reported previously(6), and are briefly summarized here. The antidepressive action of imipramine is selective. While the range of this selective action does not generally coincide with diagnostic groups, the most favorable results were obtained in the treatment of patients with cyclothymic psychoses. Therapeutic results shown in Fig. 1 are similar to those reported in Switzerland, France, Germany and Canada where clinical studies have been in progress for 3 years. The relatively low rate of total failures justifies the position that intensive imipramine treatment should be tried routinely before ECT is instituted. Patients under 60 years had significantly better results than those above the age of 60. Since both age groups consist for the greater part of manic-depressive patients, the age factor would seem to have an influence on therapeutic outcome. We found that the majority of patients who eventually respond with

FIGURE 1

TOFRANIL: RESULTS BY DIAGNOSIS AND AGE



optimal results, show the first favorable change within 3 to 6 days on 150 mg. a day. An early modification of depressive symptoms is crucial for the evaluation of antidepressant action. If one has to wait 2, 3 or more weeks before favorable changes occur, one can never be certain whether to attribute these changes to treatment or to spontaneous recovery. Moreover, if pharmacological treatment is to replace ECT, its effects must be rapid.

What we observe in the initial phases of imipramine treatment is mostly a decrease in the intensity of depressive symptoms. The patient experiences a return to normality but does not manifest a drug-induced psychoaffective syndrome such as euphoria or overactivity. There are various somatic manifestations which reflect the drug's central mode of action. Dizziness and feelings of weakness occur during the earliest phases of treatment. Mild tremors and feelings of shakiness may last somewhat longer as do perspiration, paresthesias and constipation. While none of these somatic effects is severe, they are more disturbing to patients who fail to come out of the depressive state. Although imipramine does not exert a stimulating effect, a switch from depression to hypomanic and excited states has been observed in some patients with cyclothymic psychoses. Insofar as differential effects on particular types of target symptoms are concerned, disturbances in the sphere of vitality and psychosomatic functions tend to respond better than panic moods, phobias and nihilistic delusions. It appears plausible that particular psychobiological disturbances constitute more suitable targets for the action of imipramine than others. This would explain why therapeutic results are as pronounced in reversing symptoms in some cases as they are absent in others.

The phenothiazine SKF 6270 is not in the proper sense of the word an antidepressant. Neuroleptic compounds are effective in the treatment of disorders of whatever etiology which manifest themselves through a behavioral common path of hypermotility, increased affective tension and hypernormal initiative. By virtue of their inhibitory action, they are useless and often harmful for patients with energy defi-

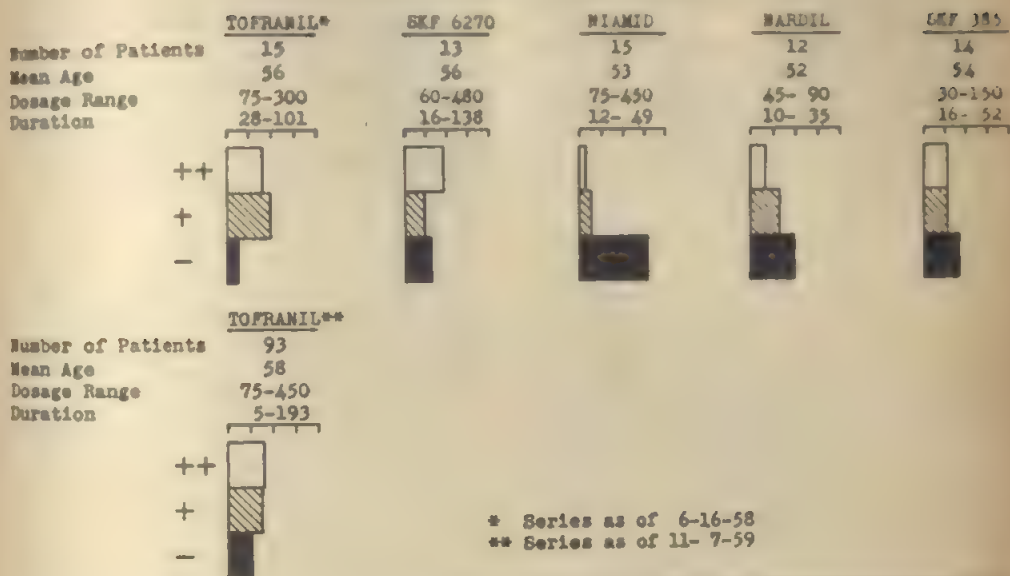
cits and affective retardation. Several French workers reported, however, therapeutic success with levomepromazine which is structurally quite similar to SKF 6270. Levomepromazine, made available to me as SKF 5116, and SKF 6270 facilitate sleep very effectively. SKF 6270 decreases abnormal initiative but does not produce extra-pyramidal symptoms of significance at therapeutic dose levels. Drowsiness, hyposalivation and constipation are the most frequently encountered somatic manifestations. Our observations revealed that patients with panic, agitation and severe insomnia responded quite favorably. This would seem to suggest that this compound qualifies for the treatment of specific depressive syndromes.

Insofar as the MAO-inhibiting drugs are concerned, our investigations have not progressed far enough to reach definite conclusions. But neither iproniazid nor the newer compounds have yet convinced us of their therapeutic effectiveness in the treatment of depressive psychoses. Generally speaking, our results are less promising than one would be led to expect from current publications. Shown on Fig. 2 is a survey of findings for each of the 5 compounds. In all, this study includes 147 patients, 111 women and 36 men. This ratio of 3:1 corresponds to the sex distribution of admissions, confirming reports in the literature that depression is far more common in women than men. The highest frequency of depressive psychoses occurs during the 5th and 6th decade in life. This fact accounts for the close approximation of the mean age of the 6 samples. With the exception of 16 psychoneurotic depressions, all patients had depressive psychoses.

To test the reliability of the initial impressions based on small sample size, the first 15 patients in the Tofr nil (imipramine) series are shown as a special group for comparison with the 93 patients who received the drug subsequently. It has been our experience that therapeutic trends observed on small samples are substantially confirmed by subsequent extensive investigations. This seems to be borne out by the comparison between the small and large Tofr nil (imipramine) series. While the data based on small samples are of neces-

FIGURE 2

CLINICAL EFFECTIVENESS OF ANTIDEPRESSANT DRUGS



sity tentative and reflect at best therapeutic trends, there would seem to be significance in a comparison of failure rates. Clinical evaluations may easily differ in matters of degree of improvement; they rarely disagree on failures. Among the MAO-inhibitors, Niamid (nialamide) seems practically ineffective. Nardil (phenelzine) and SKF 385 manifest therapeutic activity on a more substantial scale although both have failure rates of 50% and 42.8%, respectively. While more extensive studies may reveal a broader therapeutic range, it is only too obvious that these results do not justify the extraordinary promotional claims which are directed not only at psychiatrists but the general practitioners as well. There is real danger that competent psychiatric treatment of depressed patients may be reduced to simple prescription writing, and prescription of some ineffective drugs at that.

SUMMARY AND CONCLUSION

The pharmacological treatment of depressions offers this immense psychological advantage: the patient maintains his experiential continuity. The amnestic syndrome associated with ECT, to which many attributed therapeutic significance, proves

to be quite superfluous as is seen in successful pharmacotherapy. The preservation of experiential continuity has vast implications for psychotherapy. Until now, psychotherapy either followed ECT or had to be limited to patients who seemed capable of affective contact and of self-control over suicidal impulses. With ECT, the patient remains physically and emotionally passive. His recovery comes, as it were, from without. Pharmacotherapy makes him a participating partner. This offers psychotherapy entirely new opportunities to involve the patient in the therapeutic process until recovery is seen as coming from within.

The treatment of depression is once again in transition. If psychiatric history is not to repeat itself, we must realize that the measure of success will depend on our capacity to abandon static positions, to integrate new knowledge and to create comprehensive therapeutic methods.

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SOCIAL CLASS AND MENTAL ILLNESS: SOME IMPLICATIONS FOR CLINICAL THEORY AND PRACTICE

RAYMOND G. HUNT¹

One of the issues motivating frequently voiced disaffections between clinicians and experimentalists has been the purported heavy reliance placed by the former upon "intuitive" operations and clinically based theoretical excursions. Not the least of these have related to the clinician's heavy indebtedness to psychoanalytic and related formulations. Numerous criticisms (*e.g.*, 9) of clinical concepts and methodologies have centered about these issues, and especially in respect to personality, psychopathology and psychotherapy.

While the present paper certainly has no desire to gainsay the value of clinical evidence and techniques, as such, it is intended to point out certain pertinent questions about them which arise in the particular light of recent empirical investigations of relationships between psychopathological conditions and their treatment, on the one hand, and socio-cultural factors on the other.

The comments which follow will certainly not be unfamiliar to most. They may even appear banal. The point is that they may no longer be ignored as they have commonly been in the past.

SOCIAL CLASS AND MENTAL ILLNESS

Most notable among the studies alluded to have been those conducted in the New Haven, Conn. area by the research team headed by A. B. Hollingshead and F. C. Redlich(2). In this unusually well done research the investigators discovered marked social-class-linked variations in both the prevalence and incidence of mental illness and also in their treatment.

After classifying the patients in their psychiatric population into one of 5 social class levels defined according to the patient's occupation and education, Hollingshead and Redlich analyzed the kinds of treatment received by these patients for their illnesses as a function of their social

class position. Among other things, they found that lower class patients were most likely to receive no specific treatment at all (custodial care) or else some form of "somatic" therapy (*e.g.* convulsive therapy). Lower class patients were not at all likely to be receiving psychotherapy. Higher class patients, on the other hand, were most likely receiving some form of psychotherapy, at least as part of this treatment program. In further elucidation of the trends apparent in these data, the investigators proceeded to analyze the type of psychotherapy received by those patients who did receive it as related to social class position. They differentiated several general varieties of psychotherapy which were, in order of presumed intensity and merit: psychoanalysis, analytic psychotherapy, eclectic psychotherapy, relationship therapy, group therapy. Again marked relationships were found. For example, if psychotherapy was received at all, the lower class patient was most likely to receive group therapy and never the most highly regarded type of psychotherapy, full psychonanalysis. The latter was virtually confined to the top status levels.

Thorne(14) has pointed out some serious flaws in this part of the Hollingshead-Redlich work. However, what is of primary importance here is the fact that lower class patients tend not to be found in the more personal, intimate and intensive forms of psychotherapy with the same frequency as are higher class patients.

It was also found that the social class position of the patient was closely correlated with the prestige of the professional personnel who played the major role in his treatment. High status patients were quite unlikely to be treated by low status (professional) personnel and low status patients were at least equally unlikely to be treated by high status practitioners. Finally, both the duration (as measured by total number of interviews) and the intensity (as measured by frequency of interviews)

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of psychotherapy were found to increase as a function of increasing social status.

A simple economic interpretation of these results, it is important to note, is not entirely tenable. While financial considerations very probably play a part, Hollingshead and Redlich have shown them not to be the sole factors (and perhaps not even the most important ones) responsible for the phenomena observed. Also significant is the fact that the patterns illuminated by Hollingshead and Redlich are not peculiar to the circumscribed area in which they worked. Other investigators in widely scattered communities have, on a smaller scale, reported findings consistent with those discussed in the preceding paragraphs (see Hunt: 5, and Scott: 13) for reviews of this literature). It seems quite apparent that the New Haven studies especially have pointed up an issue of significance, both to society and to the professions concerned. Two aspects of this issue are the concern of the present essay; one of these relates to the validity of clinical theory and the other to psychotherapy in particular.

SOCIAL CLASS AND CLINICAL SAMPLES

It is well known and surely axiomatic that generalization from any research must proceed with due respect to the nature of the subjects constituting the sample upon which that research was performed. Strictly speaking, generalizations should be restricted to populations of which the experimental sample is representative. Indeed researchers rarely follow this stricture to the letter, often speculatively referring their finding to much wider populations. Unquestionably this is both a defensible and desirable procedure. However, some explicit checking of such generalization should occur at strategic points and the need for checking should be seriously recognized if a discipline is to attain full scientific stature and to warrant the studied attention from others which it seeks.

Now there has often been a strong tendency on the part of clinical workers to apply in literal fashion, concepts and ideas essentially clinical in nature and origin to problems of "normal" behavior. This tendency has been clearest in respect to psychoanalysis, and especially in the case of

Freud. Others beside the writer have pointed out that such applications run a serious risk of being unsound owing to the markedly non-representative character of the sample from which the generalized ideas are derived.

Data such as those from Yale, strongly suggest that the same cautions may be voiced in connection with theories of psychopathology, of the neuroses or even of a particular neurosis. They suggest that not only may samples be chronically biased with respect to the clinical-nonclinical dimension, they may be at least as seriously biased within the former. For instance, if psychoanalysts are treating primarily patients coming from the highest (status) 10 or 15% of the general population (and we now have evidence that, in general, this is the case) they are dealing with subject samples which are not only dubiously representative of the general population, but samples which are perhaps not even representative of clinical populations. Hence, to the extent clinical theory relies upon psychoanalytic and similar formulations derived from such samples (and it is quite apparent that it does, in large degree) the implications for its theorizing should be obvious.

We might point out that the natural tendency to view "cross-cultural" in terms solely of variations across widely divergent social groups (*e.g.*, Samoans *vs.* Western Europeans) represents too narrow an interpretation of the term. A truly cross-cultural regard (and it is this which is suggested as one deficiency in modern clinical theory) implies attention to variations across differentiable sub-cultural units *within* a larger social group. And, of course, a particularly important sub-cultural structure is that around which the present comments center, namely that of social class groupings within a given society.

No implication should be read into the foregoing remarks that clinicians should shut up shop as theoreticians and/or contributors to the growing fund of knowledge about behavior. What is suggested is a greater measure of caution in generalizing from potentially seriously biased "research" samples, a tighter rein on the theoretical impulse and most important, redoubled efforts

to operationalize psychoanalytic and other clinical concepts so as to make them more amenable to empirical-experimental study by more "tough-minded" colleagues.

SOCIAL CLASS AND PSYCHOTHERAPY

In respect to psychotherapy, data such as Hollingshead and Redlich's contain perhaps even more far reaching, though less direct, implications which become clear if we assume along with Ruesch and Bateson(12) that the essence of any psychotherapeutic process is communication. The heart of the process rests in the relationship between patient and therapist and their interaction one with the other. This interaction is a communication process as Ruesch and Bateson have cogently shown. Each party is, at one time or another, both a sender and a receiver of "messages," whether these be verbal or non-verbal. Each is continuously "encoding" and transmitting messages to the other and receiving and "decoding" others.

The success and efficiency of such a communicative process depends upon several factors, among the most basic of which is the necessity that each party share with the other a common "code." This in turn implies that they adhere to congruent linguistic conventions and that the conceptual and valuational orientations signaled by particular linguistic elements be shared, at least in general. Rapoport(10), moreover, has persuasively argued, "the impossibility of communication between two people who have not shared a common *experience*."² Should these conditions be lacking or rudimentary, the communication process will entail large amounts of "noise" and may break down entirely. At best, communication will be inefficient, suffering from severe distortions of various kinds and the consumption of large amounts of energy. At worst communication, as such, will cease, although it is possible that neither party will be fully aware of the immediate communicative state. If the latter be the case each party will function in an "as if" manner only—no real communication will occur.

That there will always be a fair amount of "semantic variation" (noise) in any communicative relationship of the scope

of psychotherapeutic intercourse should be obvious. Indeed a good measure of the "work" in psychotherapy is directed toward reduction of these variations. Both patient and therapist try to "understand" the other. In order for this activity to be successful, however, these semantic problems must not be too pervasive or fundamental. Otherwise the "semantic barrier" will be insurmountable or will require inordinate expenditures of time and energy. Therefore it is suggested that successful psychotherapy (assuming it can be successful) requires as a prerequisite a linguistic and semantic framework the basic components of which are shared by patient and therapist. The therapist has neither the time nor the energy to adequately train the patient in the therapist's "code" when there are deep-rooted and widespread discrepancies. By the same token, the patient rarely has the patience to train the therapist and it must be remembered that the superficial fact that both therapist and patient speak "English" is no assurance of successful communication on anything but an equally superficial level, even though they may, at times, delude themselves to the contrary.

The possible relevance of these considerations is mentioned by Hollingshead and Redlich in their discussion of possible reasons for the dearth of psychotherapeutic endeavors involving lower class patients. In the light of the ideas just discussed the argument would run as follows: therapists will, by the nature of things, select patients with whom they feel they can work most effectively, i.e., (while not necessarily a conscious criterion) patients with whom communication is both effective and efficient. In this manner the therapist comes to deal with patients with whom he shares congruent linguistic conventions and similar conceptual and valuational orientations. In other words, the therapist selects patients who, (a) "talk his language" and (b) express value orientations which are not alien to his own, thus leading him to the implicit belief that both will be able to "emphasize" with the other.³

Now there is a greater likelihood of the

³ It is quite likely, of course, that the patient engages in a similar selection process, looking for a therapist in whom he can "feel confident."

² Italics in original.

therapist finding patients who satisfy these implicit criteria among people of backgrounds similar to his own. And among the *assumed* background factors which may be implicated is that of social class position. Since it can be shown that the vast majority of psychotherapists derive from middle class backgrounds (2, 4, 11) and since it can also be shown that the middle class is characterized by a particular set of humanistic conventions and value orientations (1, 3, 7, 8) which are at least partly different from those of other class groups, it is hardly surprising that the middle class therapist should fail to number quantities of lower class patients in his caseload, and this will be true whether he is in private practice or not. These may not in reality be the people who will make the "best" patients for him. Because of this it is even possible that therapy will be less likely to succeed with lower class patients because of the high "noise" levels introduced into the communication process which is therapy. It might even be argued that the therapist *should* confine himself to middle class patients as it is with them that he operates most efficiently, and so can do the greatest good per unit of time (*cf.*, Gurrslin, Hunt and Roach(3) for a discussion of this point).

PSYCHOTHERAPY AND THE MIDDLE CLASS ETHIC

There is another related idea which can be advanced in support of the thesis just developed. It was suggested by the writer in a recent review (6) of the Hollingshead-Redlich work that not only may the *practice* of psychotherapy be class-linked as they have shown, but perhaps the very *principles* of psychotherapy may be so linked. Since these have been developed mainly by middle-class practitioners in the course of their experiences mainly with middle class patients, it seems a good possibility that the therapeutic principles which have been generalized from these experiences may be intimately tied to the factors typifying these particular interactions.

A similar contention was developed some time ago by Kingsley Davis(1) in connection with the principles of mental hygiene. It was Davis' thesis that these "principles"

were, in fact, little more than secular statements of the prevailing middle class morality, the Protestant ethic disguised under a superficial mantle of technical jargon and pseudo-scientific respectability. What is more, Davis was most pessimistic about the prospects for mental hygiene principles representing anything more than this. In any event, it does seem wise to entertain the possibility that what Davis contends to be true of general mental hygiene principles is no less true of psychotherapeutic principles. To the extent this is true, it is likely that not only will psychotherapeutic treatment of lower class patients be difficult and inefficient, it may actually not be practicable in any real sense.

To argue in reply that what the therapist needs is to acquire a thorough knowledge of the lower class individual, perhaps even to the extent of becoming a specialist with such patients (as Hollingshead and Redlich suggest), does not comprehend the issue. While this may seem an obvious and desirable step, there remains the possibility that equipping the therapist with conventional principles of practice may functionally disqualify him from success. It may be, of course, that special *principles* will be developed as guides to the psychotherapeutic treatment of lower class persons, but this requires an active research process the like of which is nowhere evident at the moment. Even so the possibility does remain that psychotherapy, as such, is the principles which govern it and that such principles are fundamentally inapplicable to lower-class persons among others. They may, for example, be wholly unable to "empathize" with the basic interpersonal aspects of the psychotherapeutic process and even less with its implicit moral, epistemological and operational precepts. In short, the time appears to have arrived when we must consider the possibility that psychotherapy, at least as presently constituted, is a treatment process the efficacy of which is confined to middle and higher class patient populations.⁴

⁴ Hollingshead and Redlich offer some evidence which indirectly supports this point. Even when a deliberate effort was made to overcome the economic barrier (by free treatment) it was still extremely difficult to interest lower class patients in psychotherapy. Further, the high drop-out rate of lower

Along these lines it is necessary to recognize that the kinds of ethical and conceptual systems characterizing a people are not wholly arbitrary. They are rooted in the conditions of life under which they must operate and may, in general at least, be quite functional in respect to adjustment to those conditions (*cf.*, 3, 7). Instructing or indoctrinating them in other kinds of value orientations, *etc.* (as in psychotherapy) without due regard for the relationships between these orientations and real conditions of life may lead to more harm than good as the new orientations may be patently non-functional for those conditions. Thus the hypothesis presents itself that efforts to impose psychotherapy upon lower class patients and/or attempts to propagandize them into greater receptivity to such programs may in the long run, be creating problems instead of solving them. It may be "doing good" in the most pernicious sense of the term. Such an hypothesis must be entertained in the absence of satisfactory evidence to the contrary.

We might point out in conclusion that no recommendation is here being made that the possibility of applying some form of psychotherapy more widely to lower class patient populations be abandoned. Rather what is required are diligent efforts at determining the feasibility of such application in the light of the considerations outlined above. Whatever the outcome, it might be borne in mind that there is no disgrace in restricting the practice of psychotherapy to certain segments of the overall patient population where it can be shown to be effective. Specialized forms of treatment may be required for different populations; there is nothing especially

novel about that. What would then be needed would be the development of alternative forms of treatment for minority groups.

SUMMARY

From a survey of the recent literature concerning the prevalence and treatment of mental illnesses it was concluded that great caution should be exercised in the generalization of clinical data not only to "normal" populations but even within clinical groups. The hypothesis was offered in regard to psychotherapy that it may well be a "middle class" form of treatment. In concluding it is suggested that clinical practitioners assume a far more studied and sophisticated cross-cultural (or, more exactly, pan-cultural) posture than has characterized them in the past.

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class patients undergoing outpatient psychotherapeutic treatment is notorious. Regarding this last point as yet unpublished data on 170 cases collected by the author at the William Greenleaf Eliot Division of Child Psychiatry in Washington University revealed that while some 70% of middle and higher class patients seen at the Division's Child Guidance Clinic progressed from the intake phase into full treatment, less than 30% of working class patients did so. Moreover, about 25% of higher class patients completed therapy as compared with only 9% of lower class patients.

HOMOSEXUALITY AND PARANOID SCHIZOPHRENIA : A SURVEY OF 150 CASES AND CONTROLS

FRANKLIN S. KLAUF, M.D., AND CHARLES A. DAVIS, M.D.¹

In his analysis of Dr. Schreber's autobiography, Freud suggested that paranoid psychotic symptoms develop as a defense against emerging unconscious homosexual wishes. This hypothesis has generally been regarded as proven, but few scientific studies have been done to verify it.

Modern logic has taught us that, as Morris R. Cohen(2) puts it, "Those who begin with absolute truth cannot improve upon it." Unfortunately, on the basis of a few non-controlled observations, Freud's paranoia hypothesis was accepted as absolute truth, although Freud himself(4) cautioned against this, writing skeptically,

It remains for the future to decide whether there is more delusion in my theory than I should like to admit, or whether there is more truth in Schreber's delusion than other people are as yet prepared to believe.

Modern logic has also taught us 3 important principles about hypotheses like Freud's. First, scientific investigation cannot prove such an hypothesis to be absolutely true, but only to be better than others in the field. Second, the real meaning of any hypothesis resides in its consequences. Third, the implications of an hypothesis should be considered independently of the question of whether it is in fact true. That is to say, although an hypothesis may be false, it may have useful determinate consequences.

Applying these principles to Freud's hypothesis, we see, first, that it would be impossible to design a study the results of which would prove the hypothesis to be absolutely true. According to the third principle, it really makes little difference whether the original hypothesis is true, since, even if it is not true, we still may obtain useful data by investigating its consequences. Therefore, we shall follow

the second principle and investigate the meaning of Freud's hypothesis in its implications and consequences.

The process of investigating the consequences of a hypothesis is termed "verification." This process requires: first, that we deduce the consequences of the hypothesis; and second, that we examine these deduced consequences to see whether they agree with the hypothesis. Freud's hypothesis states that during an acute paranoid psychotic illness, a relative failure of repression occurs and repressed material comes closer to consciousness; paranoid symptoms develop as a defense against the emergence of unconscious homosexual wishes.

The first consequence deduced from Freud's hypothesis is as follows: Since unconscious homosexual wishes are emerging during the acute illness, we should expect to find such patients preoccupied with homosexual thoughts and wishes. With failing repression the histories obtained from these patients might more frequently contain evidence of previous homosexual experiences.

A second consequence of the Freudian hypothesis concerns the content of the paranoid delusions and hallucinations. Since the sexual problem is theorized to be of paramount importance as the basis of paranoia, we should expect the delusions and hallucinations to have prominent sexual content.

A third consequence concerns the sex of the persecutor. Freud states(4),

The person who is now hated and feared as a persecutor was at one time loved and honored. . . . It is a remarkable fact that the familiar principal forms of paranoia can all be represented as contradictions of the single proposition "I (a man) love him (a man)."

Since the persecutor was previously the homosexual love object, we should expect the sex of the persecutor to be the same as that of the patient.

A fourth consequence requires clarifi-

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cation. Modern concepts of logic and operationalism have shown that facts and theories are meaningless except as parts of a system. Thus, Freud's paranoia hypothesis is an integral part of his entire system explaining psychodynamic development and functioning. In the Schreber analysis, Freud relates Dr. Schreber's religious preoccupation to Schreber's disturbed relationship with his famous and punitive father. Freud discusses elsewhere (5) the relationship between the domineering ego ideal and the development of a pathological propensity for religious belief. Thus, the role of the strict father in the development of pathological religious ideas and in the determination of actual and fantasied homosexual object choice is constantly stressed. Consequently, we should expect religious preoccupation to be close to the surface and freely expressed by many acutely ill patients, especially those whose premorbid religion was characterized by strong repression.

We shall examine the above deduced consequences to see whether they agree with or contradict Freud's basic hypothesis, and his hypothesis as expressed in his system.

MATERIAL

The material is derived from the 1943-57 psychiatric case records of the U. S. Public Health Service Hospital, Ft. Worth, Texas. During and after the Second World War, the hospital was a center for the treatment of servicemen (Navy, Marine Corps, Coast Guardsmen and Veterans) suffering from the major mental illnesses. Most of the patients were seen in the acute stage of their first episode of mental illness.

METHOD

From these psychiatric case records, 150 male cases diagnosed paranoid schizophrenia, and a control group of 150 male non-psychotic cases of other miscellaneous diagnoses (Table 1) were selected. In selecting the cases, the entire chart of each patient was reviewed. If there was any doubt concerning the diagnosis, the case was excluded from the study. Only patients conforming to the criteria of the American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorders for the diagnosis of paranoid schizophrenia were included in the paranoid group. The non-psychotic cases were scattered among the 3 diagnostic categories listed in Table 1. The main selection factor used for both groups was the presence in each record of an "adequate sexual history." By "adequate sexual history" we mean the notation in the psychiatric evaluation of each patient of a heterosexual and homosexual history. A definite recorded statement by the patient of the presence or absence of previous homosexual experiences was required for both groups in the study. Records containing only opinions of the examiner regarding the presence of latent homosexuality or the patient's inability to express concern about homosexuality were discarded. Many of the records, complete in other respects, did not meet these specifications and could not be included. An observation made during the perusal of the records was that the various examiners seemed to be divided into two main groups, the first seemingly trained to seek out homosexuality as the underlying factor in the paranoid schizophrenic process, and the second group, who

TABLE 1
DIAGNOSTIC CATEGORIES IN CONTROL GROUP

<i>Psychoneurotic Disorders</i> (includes former category "Mixed Psychoneurosis")	<i>Personality Disorders</i> (Includes former category "Psychopathic Personality." Paranoid Personalities were excluded.)	<i>Transient Situational Personality Disorders</i>
101 67.3%	42 28%	7 4.7%

seemed reluctant to take a complete sexual history on acutely ill psychotic patients. A typical comment of the second type of examiner was, "The patient was not questioned in this sphere (homosexuality) for fear of further shattering his defenses."

The following factors were selected for statistical evaluation:

1. *Age.*

2. *Marital Status.* The patient was placed in the married group if he had ever been married. No distinction was made for divorced or separated patients.

3. *Religion.*

4. *Previous Homosexual Experiences*—by which we mean the report of one or more overt homosexual experiences after puberty, i.e., oral or anal sexual relations between individuals of the same sex, or mutual masturbation between individuals of the same sex.

5. *Presence of Homosexual Preoccupations During the Illness*—were recorded as present if homosexuality was reported as the predominant concern of the patient's verbalizations.

6. *Presence of Delusions or Hallucinations of Sexual Content During the Illness.* It is to be noted that this category is termed "Sexual," rather than "Homosexual," as it includes delusions and hallucinations regarding infidelity.

7. *Presence of Religious Preoccupations During the Illness*—recorded as present, if concern with religion was emphasized by the patient in his verbalizations.

8. *Sex of the Persecutor.* Often the patient's persecutor was not a specific individual, but was stated to be a group, e.g., the officers in the Navy or the Communist Party. In such cases, the patient's persecutor is listed as male.

DISCUSSION

No comparison of the results of this study with those of previous studies will be attempted because of differing criteria used to define homosexuality and homosexual experiences and the absence of control groups in most other papers. The data compiled from this case study are summarized in Tables 2, 3 and 4. Tables 2 and 3 show comparisons of the collected data of the control and paranoid schizophrenic groups. Table 4 includes data on the persecutor within the paranoid schizophrenic group.

ADVANTAGES OF THE STUDY

1. The material was drawn from psychiatric reports that were not specifically designed for this study, thus reducing bias. The presence of an "adequate sexual history" was the main selection factor used. 2. Only paranoid schizophrenic cases conforming to the official diagnostic criteria were used. All of these patients had delusions of persecution. 3. This study, with the exception of two small Rorschach studies by Chapman and Reese(3) and Aronson(1), represents the first psychiatric study on this subject to include a control group. 4. The scope of recorded data in the various categories of the study is specifically defined. This is in marked contrast to previous studies, such as Gardner's(6), where a broad criterion like "Symbolism in action or words" is recorded as evidence of homosexuality, and Norman's(7), where

TABLE 2

	Paranoid Schizophrenic	Controls
Previous Homosexual Experiences*	55 36.7%	28 18.7%
Homosexual Preoccupations	46 30.7%	9 6%
Delusions or Hallucinations of Sexual Content	40 26.7%	0
Religious Preoccupations	33 22%	4 2.7%

* Within the Paranoid Schizophrenic Group.

1. 40% of those who had delusions or hallucinations of sexual content had previous homosexual experience.
2. 50% of those who had homosexual preoccupations had previous homosexual experience

fear of sexual relations with women is taken as evidence of conscious homosexuality.

LIMITATIONS OF THE STUDY

1. The material is secondary source material. Further verification of Freud's theory

and its consequences would require study of a large sample of primary source material. 2. The material used was obtained by several physicians with varying degrees of psychiatric experience, under the supervision of more experienced psychiatrists.

TABLE 3

	Age (Avg.)	Marital Status	Religion	Prev. Homosexual Experiences	Homosexual Preoccupations	Delusions or Hallucinations	Religious Preoccupations		Age (Avg.)	Marital Status	Religion	Prev. Homosexual Experiences	Homosexual Preoccupations	Delusions or Hallucinations	Religious Preoccupations	
CONTROLS								PARANOID SCHIZOPHRENIA								
Age	31.8				27.3	0	24.7	32.4						31.9	32.7	32.0
Married		89 59%		12 13.5%	4 4.5%		1 1.2%		71 47%			23 32.4%	20 28.2%	15 21.1%	17 23.9%	
Single		61 41%		16 26.2%	6 9.8%		3 4.9%		79 53%			32 40.5%	26 32.7%	25 31.6%	16 20.3%	
Catholic			15 10%	5 33.3%	3 20%		1 6.7%		34 22.7%		34 22.7%	16 47.1%	10 29.4%	13 32.5%	8 23.5%	
Protes- tant			126 84%	21 16.7%	6 4.8%		3 2.4%		116 77.3%		116 77.3%	39 33.6%	36 31.1%	27 67.5%	25 21.6%	
Jewish			2 1.3%	0	0		0		0		0					
No religion			7 4.6%	2 28.6%	1 14.3%		0		0		0					

TABLE 4

DATA ON PERSECUTOR IN PARANOID SCHIZOPHRENIA GROUP
(NONE IN CONTROLS)

Persecutor	Total Number and Per Cent	Married	Single	Previous Homosexual Experiences	Homosexual Preoccupations	Delusions and Hallucinations	Religious Preoccupations
Female Only	5 5.3%	5 100%	0	3 5.4%	2 4.3%	3 7.5%	1 3.0%
Male and Female	15 10%	6 40%	9 60%	5 9.1%	5 10.9%	6 15%	3 10%
Male Only	127 84.7%	56 44.1%	71 55.9%	47 55.5%	39 84.8%	31 77.5%	29 87.0%

This has been compensated for by a clear definition of terms and a careful review of the case protocols. As is true in all psychiatric case studies, certain data may be influenced by the impressions of the examiner. In this paper, the recording of the presence or absence of homosexual or religious preoccupations may, to some extent, be so determined.

RESULTS AND THEIR RELATIONSHIP TO THE HYPOTHESIS

The first consequence of Freud's hypothesis was that we should expect to find acutely ill psychotic patients preoccupied with homosexual thoughts and wishes. In the paranoid schizophrenic group, 23 (41.5%) had homosexual preoccupations during the illness, as compared with 9 (6%) in the control group. This difference was found to be very significant using the Chi Square Test of significance. (A divergence as large as the one noted could have happened by chance alone less than one time in a hundred.) The first consequence was thus verified, since homosexual preoccupations during the illness were recorded approximately seven times as frequently in the paranoid psychotic group as in the control group. It was also proposed that, as a result of shattered defenses, it might be easier to obtain a history of previous homosexual experiences from the psychotic group. This was found to be the case. Previous homosexual experiences were recorded 1.96 times, or nearly twice as frequently in the paranoid psychotic group as in the control group. This difference was also found to be very significant using the Chi Square Test.

The second consequence noted was that we should expect the delusions and hallucinations of the paranoid group to have prominent sexual content. No comparison is possible with the control group, since non-psychotics do not have delusions and hallucinations. Within the paranoid group, only 40 or 26.7% had delusions and hallucinations of sexual content, including delusions of infidelity. Thus, the second consequence was not found to be verified by the study.

The third consequence of Freud's hypothesis was that since the persecutor was

supposedly the homosexual love object, we should expect the sex of the persecutor to be the same as that of the patient. This was found to be as predicted. Within the paranoid group, 127 (84.7%) had male persecutors, 5 (3.3%) had female persecutors, and 15 (10%) had persecutors of both sexes.

The fourth consequence was that we should expect religious preoccupations to be expressed by many acutely ill psychotic patients. This was verified by the study. In the paranoid schizophrenic group, 33 (22%) had religious preoccupations during the illness, as compared with 4 (2%) in the control group. Thus, religious preoccupations during the illness were recorded approximately 8 times as frequently in the paranoid as in the control group. This difference was found to be very significant using the Chi Square Test.

SUMMARY

In this paper, the data obtained from a study of the records of 150 paranoid schizophrenic patients and a control group of 150 non-psychotic patients were presented and discussed in relation to Freud's hypothesis concerning the development of paranoid symptoms. Four consequences of Freud's hypothesis were deduced. Three of the deduced consequences received strong verification from the study, the differences between the paranoid psychotic and control groups being found very significant. The fourth consequence, that we should expect the final delusions and hallucinations of the paranoid group to have prominent sexual content, did not receive verification from the study. Comparison with the control group here was impossible due to the absence of delusions in the control group.

Another point needs to be mentioned concerning the present study. This is the fact that two trends may exist together in a personality and yet not necessarily be related. Bleuler originally brought up this point in commenting that homosexuality was very prominent in Schreber's case history, but may not have been the determining factor in the paranoid illness. While the present study, within its limits, lends strong verification to three consequences of Freud's theory, it is possible that future investigation may show the coexistence of

the two trends of paranoia and homosexuality to be a coincidental finding.

Few psychiatrists dispute that Freud's second intelligence was productive of many theories that have deepened our knowledge of psychological functioning. But, it is also a logical fallacy to argue that a theory is verified because it explains certain facts.

The process of verification, as utilized in this paper, is the same method used by the vast majority of scientific investigators.

We feel that the following studies of this important subject are needed :

1. Studies of the relationship of homosexuality to paranoid schizophrenia in female groups, as compared with control groups. As noted in the literature review, there are only two non-psychoanalytic case reports dealing with homosexuality and paranoid schizophrenia in females.

2. Studies on this subject utilizing primary source material. A protocol should be drawn up in advance, including definition of terms and categories to be recorded. This protocol should be used in interviewing a random sampling of paranoid schizophrenic patients,

and a similar group of control patients of varying degrees. Other control groups may also be used. The examiner should be free of preconceived opinions regarding the relationship of homosexuality to the paranoid schizophrenic process.

Until more scientific studies are made and analyzed, the hypothesis that paranoid psychotic symptoms develop as a defense against emerging unconscious homosexual wishes cannot be regarded as verified.

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THE CULTURAL PROBLEM : PSYCHOPATHOLOGY IN TAHITI

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French Oceania comprises several groups of islands in the South Pacific lying between 5 deg. and 30 deg. south latitude and 130 deg. to 155 deg. west longitude. The best known is Tahiti, which lies about 3600 miles SSW of San Francisco, but the area includes all the Windward Islands, the Leeward Islands, and the Marquesas, Tuamotus, and Australes with a total population of 73,201 (1956), about 87% Polynesian and 9% Chinese. The popular myth that there are 5 women to every man, as stated by an American who had cruised among the islands for over a year, is quite out of line with the official census figures which actually show a slight preponderance of men in the area.

The principal medical facilities for the area are in Tahiti on the outskirts of Papeete, the capital (17,247). These include the Department of Public Health, the Civil Hospital, and a separate small "asylum" of 17 rooms. Tahiti was proclaimed part of the French Republic in 1880, and the first recorded psychiatric patient was hospitalized on September 18, 1884, an alcoholic homicide who was released for good behavior on January 20, 1886. The original psychiatric ordinance dates from December 28, 1885, and as is usual in French colonies, was based on the Law of June 30, 1835. A new Ordinance was passed on August 28, 1913. The present building, the usual structure of the older period with stone cells, iron bars, enormous clanking locks, and no plumbing, became the asylum in 1948. The records have been rather casual until quite recently, but there were 8 names on the books in 1911, all Tahitian; and on January 1, 1947, there were 13 names, 4 of them admitted during 1946; 3 additional names occurred in the notes during 1947. At that time there was one patient who had been hospitalized since 1926, and another who had been admitted for the third time in 1931.

Firm figures begin in 1954, when there were 31 patients seen with psychiatric diag-

noses, of whom 18 were hospitalized; in 1956 these figures were 57 and 46. This represents an increase from 1954 to 1956 of 84% in patients seen, and 155% in patients hospitalized. Since the total population only increased 16% from 1951 to 1956, the psychiatric situation may be taken as a dramatic illustration of the principal that hospital figures represent merely the outflow of psychopathology from a previously existing reservoir of unknown extent, and that arrivals at the hospital depend upon the quality of the care offered and the state of public opinion rather than on the incidence or prevalence of mental disorders. The fact that accurate record-keeping was initiated is taken to indicate that the quality of medical care suddenly improved in 1954.

At the time of my visit in May, 1958, there were 3 physicians at the hospital: the Chief, Dr. Georges Thooris; Dr. Guy Ruez; and Dr. Henri Fayet. They were fully occupied with communicable diseases, acute surgical problems, and other urgent matters. None of them had been trained in psychiatry, and they had no facilities available for treating psychotics, not even an electroshock apparatus. By the time I was ready to depart, however, they had the idea of attempting cardiazol shock treatment with some of the chronic patients who had been in custodial care for 10 years or more. The character of these colleagues is demonstrated by the fact that Dr. Fayet had for a house-boy a 15-year-old juvenile delinquent who had been remanded to him by the Court, and was going through the initial throes of domiciliary placement with this boy. He had previously accepted another such individual who, after a few years in the Fayet household, had settled down to an honest and respectable life in the community. The existence of such juvenile delinquents is in itself a commentary on the cultural problem: the fact that it is part of the Tahitian "culture" to distribute offspring among uncles, aunts and other collaterals for upbringing does not necessarily make this kind of relegation

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more acceptable to a Tahitian child than it would be to an American child.

The staff was kind enough to allow me to interview all 12 patients in the "asylum." There were 3 others in the general hospital whom they requested me to interview for diagnostic purposes. The patients in the asylum are listed below.

The diagnoses, except in 2 cases, were not difficult to make, and in no case were "cultural" factors significant in this respect. The interviews were conducted in French by the writer, with occasional help from a Tahitian nurse who acted as interpreter.

Tham (No. 1), Loc (No. 2), and Tupai (No. 10) exhibited hebephrenic mannerisms and muttering. Faaua (No. 3), Amona (No. 6), and Ivaa (No. 8) remained mute in fixed attitudes and were easily recognizable as catatonics. Mata (No. 4) decorated herself with flowers and had manic outbursts with hypersexuality. Rich (No. 5) sat in a depressive attitude listening to hallucinations to which she responded dejectedly. Parau (No. 7) had catatonic outbursts of violence. Elie (No. 9) talked about Presidents and Generals, and said he had millions of children. He kept asking to go to the maternity ward. His paranoid delusions became quite clear.

The two diagnostic problems were Moana (No. 11) and Kong (No. 12). Moana was subject to outbursts of violence, and when he felt one coming on he asked to be locked up. There was some doubt as to the nature of these outbursts, and psychomotor epilepsy could not be ruled out without laboratory studies which were not available. Kong exhibited bizarre

behavior. He took a bicycle out of the store and had some ideas of reference. It appeared that prolonged observation and careful psychoneurographic studies would be required to rule out one of the possible dementias, such as Pick's disease.

The interviews with the 3 patients at the general hospital were more detailed. The difficulties in these cases did not lie in the cultural situation, but in the clinical psychiatric problems.

1. Monique was a 23-year-old Tahitian housewife whose chart showed nothing remarkable in the physical examination. The Kubes was negative, with normal urine, spinal fluid and blood cholesterol. The hematological findings were as follows: r.b.c. 3.8 million, hemoglobin 65%, w.b.c. 6600 with 8 eosinophiles; these were considered by the staff to be within normal limits for the region because of the endemic parasites.

The patient sat trembling with fear, her pulse 100, when the visitor was introduced. He proceeded as he would have during a diagnostic interview with such a patient anywhere. First he allowed her to present some complaints, which in this case were principally bitemporal headaches, for which her mother had advised her to go to the hospital. Then he did a partial neurological examination so that she would see that he had a familiar medical interest in her condition. This revealed little except equally dilated pupils and a coated tongue.

In the course of the examination, he asked Monique if she wrote with her right hand or her left. She replied "Both." He then

	Name	Sex	Age	Origin	Date of admission	Diagnosis (S. = Schizophrenia)
1.	Tham	F	36	Tahiti	3/49	S. Hebephrenic
2.	Loc	F	46	Indo-China	2/40	S. Hebephrenic
3.	Faaua	F	48	Tahiti	1/41	S. Catatonic
4.	Mata	F	51	Moorea	3/40	Manic
5.	Rich	F	53	Tuamotu	1/26	Manic-Depressive, Depressed
6.	Amona	M	28	Tubuai	1/51	S. Catatonic
7.	Parau	M	29	Tahiti	11/49	S. Catatonic
8.	Ivaa	M	33	Tuamotu	12/55	S. Catatonic
9.	Elie	M	36	Tahiti	3/51	S. Paranoid
10.	Tupai	M	38	Tahiti	9/56	S. Hebephrenic
11.	Moana	M	49	Tuamotu	4/46	S. Catatonic or Epilepsy Psychomotor
12.	Kong	M	55	China	1/57	Paranoid or Pre- Senile Dementia

object her writing materials and she began, under first with some scribblings and later as free composition wrote her name and birthdate and some religious sentiments. This set the stage for the first psychiatric question: "Do you have any children?" She said that she had 3, and that one was with her mother. The doctor asked about the other two and this started tears, so she was brought back to the paper and asked to draw a man, a woman, and a house. She refused the woman at first and later when requested, she steadfastly refused to draw people without clothes. She evaded discussion of the drawings by talking about fishing, canoeing and religion, and the psychiatrist went along with this. The lack of pressure putting her more at ease, she was now asked if she were hearing voices. She had a complete set of these—a parental voice saying that God would forgive her sins, a matter-of-fact voice that told her to eat well, and a wicked little devil. She then recounted a dream of hands grabbing her: bad women.

The question of the other two children was approached once more. She said they had been miscarriages, and began to weep again. The bad voices were tempting her at this point and she brought up her religious mania to ward them off. By this time she was fully co-operative and did not want to terminate the interview, saying that she wanted to go on talking. She talked about serpents biting her in the foot, big serpents like one sees in the movies, and pointed to an ulcer on her foot. The psychiatrist asked the local doctor if there were any snakes in Tahiti and he said there were none.

At this point the patient was ready to be turned over to the local doctor for psychotherapy, since she was now eager to talk. A firm diagnosis was not yet possible, but the picture was clearly a hysteroid one, probably of schizophrenic origin. The solution for both diagnosis and treatment, he was told, was to listen, listen again, and listen some more. He said he did not have the time available and wanted advice concerning drug therapy.

This patient's behavior and attitudes were more childlike than those of most human beings of her age and experience. Allowances were made for this and she was treated like a girl of high school age. Cultural factors had no more clinical relevancy than the "cultural" problems of an American high school corridor, although they were radically different. In summary, this young woman was suffering from a

familiar form of psychiatric disturbance which could be diagnosed and handled on the basis of foreign experience.

2. Pierrette, a 20-year-old woman, had been brought to the hospital by her parents that afternoon. She stated that she had become enraged because they took away her baby and told her it was dead and then she had found out it was not so. Pierrette was her mother's fifteenth child and had been given to the grandparents to raise in the Leeward Islands while her parents remained in Tahiti. Initially she said that she had first been married at 16, that she had had one son and then a miscarriage, and that she had left this husband because he beat her. Then she had had a miscarriage with her second husband, and afterward the child who had been taken from her. Later she changed her story. She said that her first baby died because of poor midwifery, her second had gone with his father, her third had also died because of a careless midwife, and the fourth had been taken from her.

The interview was a stormy one. The patient showed considerable hostility toward the visitor, and if she was pressed became angry and finally wept. After testing these responses for a few minutes, the psychiatrist thought it was indicated to tell the patient that he was a neutral medical man and not a friend of her mother's. He also told her she could depart if she so desired. These manoeuvres were successful and she became more at ease and more co-operative, in spite of her feeling that people were trying to make fun of her and to make her cry. She then admitted that she was hearing voices and that it was these voices that made her so hostile.

At this point her anger had been turned aside from the psychiatrist and she became venomously angry at Dr. Ruez, who with Dr. Fayet and the Tahitian nurse-interpreter, was also present. The psychiatrist asked the interpreter if this kind of anger was unusual among Tahitians and she replied that it was. He then asked Pierrette how she felt about her mother sending her to the grandparents. Pierrette did not understand this question, and the nurse explained to the doctor that this was quite a usual occurrence and that Tahitian children were accustomed to it. The psychiatrist replied that this was interesting, but politely insisted that the nurse nevertheless ask Pierrette in Tahitian how she felt about it. Her question caused a renewed outburst of rage on the part of Pierrette and it was evident, without understanding what she was saying, that she was very angry at her mother. In fact,

the real occasion for bringing her to the hospital, it now appeared, was that she had taken a knife to her mother.

The disposition of this case posed a difficult problem. Pierrette was too disturbed to be kept long in the general hospital. On the other hand, all present agreed that to put her in the "asylum" under present conditions might be equivalent to a very long sentence of confinement. But if she were released, she might hurt someone, since she was an acute schizophrenic under the influence of voices. It was decided to try metrazol treatment.

3. The third case was that of Mou, a 20-year-old man accused of having had intercourse with a 10-year-old girl. He had originally been charged with the French equivalent of statutory rape, but this charge had been reduced because the prosecutor felt that he might be acquitted of rape and there would be more chance of conviction if the charge were less serious. The judge had remanded him to the hospital for psychiatric examination.

The mother, a Tahitian-born Chinese, had been married 3 times, and had 11 children. As a girl she had married a 27-year-old man from China, by whom she had had 3 children. The patient was the third of these, and when he was two years old, his father had died. The following year the mother remarried a man of her own age, had another child, and was widowed again when the patient was 5. Another year elapsed and she married another man from China who was 22 years older than herself, by whom she had 7 children. Thus there were 13 people living in the house. The patient slept in the same room as his parents until he was 10, and then had been moved in with his sisters, and was particularly attached to a half-sister who was 4 years younger than himself. It was felt that this was of some significance, since she had been 10, the same age as the alleged victim, when the patient entered active puberty.

The plaintiff had lived next door to the patient for many years, with her parents and some married sisters. Mou stated that one day when he was down by the river he had run across the girl and she had made some seductive advances. He had responded and they had ended up having intercourse. She said nothing about it to anyone until some other children who had observed the occasion reported it to her mother, and then she had confessed, with the result that charges were made and pressed.

Mou said that he had had about two litres of wine on Saturday and two more on Sunday but none since, and the alleged offence was committed on Tuesday. He had had occasional intercourse with girls his own age and spent much time in erotic fantasy. He had recently had frequent spontaneous ejaculations during sleep, and careful enquiry elicited that these were unaccompanied by any dreams that he could remember, in spite of their frequency. The psychiatrist made a diagnosis of infectious prostatitis on the basis of this history, and suggested that Dr. Ruez enquire about this. The patient then stated that he had had untreated gonorrhoea a year previously, *i.e.*, gonorrhoea treated by a native herb doctor. His prostate was now massaged. It was found to be slightly enlarged and yielded a large spurt of purulent fluid.

The medico-legal diagnosis was then made as follows: (a) Legally sane. (b) Sexual psychopathy, mild. (c) Prostatitis.

It was recommended that effective treatment for his gonorrhoea be initiated, with prostatic massage, and that following this, before trial, the psychiatric examination be repeated.

The significant features which emerged from this survey of the available psychopathology were as follows:

1. *Epidemiology.* The very large percentage increase in psychiatric patients seen, after the medical facilities were slightly improved, is noteworthy. From experiences in other countries(1) it would be expected that a further large increase would occur if further improvements were made. After adventitious social contact with the populace, there is no reason to doubt the existence of a large reservoir of psychopathology in Papeete at least. This belief is confirmed by Dr. Thooris' impression that Polynesians are very unstable and suffer outbreaks of nervous disorders with slight provocation, especially manifested by skin pathology. The hospital admissions for psychiatric disorders more than doubled between 1954 and 1956, and it is not difficult to conceive that the latter figure of 46 admissions could easily triple. This would yield a rate of about 2/1000 population admitted for psychiatric disorders per year, which is within the expected range. That is the rate for Martinique, a well-equipped French colony (1954), and

it lies between the U. S. rate of 1.36 1000 in 1935 and 2.34 1000 in 1956(2). There is as yet no reliable evidence that the incidence or prevalence of psychiatric disorders varies in different parts of the world or in different cultural and racial groups ; the evidence favors rather differences in the tendency to seek treatment(3).

2. *Etiology.* The cases cited indicate that certain situations tend to have a disturbing influence on sensitive personalities, regardless of cultural sanctions or freedoms. A child who is sent away by her mother may feel just as rejected in a society which has a relaxed attitude about child-bearing and child-disposition as in a society which is very rigid about such matters. The fact is that in pre-missionary days it was a Polynesian custom to throw extra children into the sea(4), and it is difficult not to interpret the present relaxation as a politer continuation of this decisive form of rejection. Such drownings were not any less traumatic to the children concerned because they were culturally sanctioned. And a boy who grows up in a crowded household in a society whose sexual freedom is still publicized (its complexity can be judged by Monique's prudery about drawing nudes) may be just as disturbed by too much contact with sisters and parents as a boy who grows up in the slums of a Puritan city. Psychoanalysts all over the world tend to confirm the universality of the traumatic effect of certain experiences on certain kinds of people regardless of the attitude of the surrounding "culture."

3. *Symptomatology.* The symptomatology of psychoses and borderline states can be recognized by an experienced clinician even when he moves from culture to culture without special preparation.

4. *Diagnosis.* Again, psychiatric diagnoses can be made on medical grounds which are essentially independent of local cultures, as demonstrated by the hospital cases in Tahiti.

5. *Therapy.* Psychotherapeutic maneuvers can be readily transferred from one culture to another. Principles learned in the treatment of young women in Connecticut or California were just as effective in the South Pacific.

Once the patient arrives in the clinical

situation, therefore, cultural considerations seem to be of little moment. Local prejudices are of great importance administratively, politically, sociologically, and economically, but there is no evidence that they are of psychiatric significance at the hospital level.

Generally speaking, attempts to relate so-called "cultural" factors to mental illness are open to question. The current tendency in this direction may be obscuring more important issues. A careful reading of the literature gives the impression that psychodynamically, culture is on the same level as autointoxication, racial prejudice, and economics. The patient may be only too relieved to blame his troubles on the intestinal system, the social system, or the economic system, and the biased therapist may help him along with this project of finding a scapegoat. The cultural approach encourages the nostalgic illusions(5) of most human beings : the pathetic fallacies of the Golden Age, the Blessed Isle, and the Favored Class. It is not likely that (a) "Things were better in the old days." There is no evidence that (b) "Things are better among (so-called) primitive people, such as those who live on tropical islands." And it is begging the question to say that (c) "Things are better among people who have fewer worries, such as Caucasians, Negroes, primitive people, educated people, rich people, peasants." The doctrine that people are victims of their environments is a doubtful ortho-psychiatric position.

It appears that a certain proportion of every population, and probably the same proportion of every large population, is going to suffer from outbreaks of psychosis or neurosis each year, regardless of background : Papuans, Creoles, Polynesians, Siamese, or Anglo-Saxons. This impression is based on visits to mental hospitals in 30 different countries, and consideration of the indicated reservoir of psychopathology in each place. The proportion of those afflicted who will come to the attention of the medical authorities under various conditions is another kind of problem, and hospital admission rates should be carefully scrutinized lest they distort the psychiatric realities. In any case, before the relationship between culture and psychiatric disorders can be

adequately evaluated, the concept of "culture" itself requires more rigorous clarification, and this is not a simple matter, as Morgenbesser points out in his article on the "Role and Status of Anthropological Theories" (6).

SUMMARY

This is the third of a series of papers on the psychiatry of the South Pacific. The present study includes all known hospitalized psychiatric cases in French Oceania, together with some historical notes. Cultural factors were of negligible significance at the clinical level. The current emphasis on such factors is interpreted as an attempt to find a successor to such scapegoats as devils, autointoxication, tubercle bacilli, economic conditions, *etc.*, as etiological agents in psychiatry. This emphasis is most likely an outcome of the nostalgic illusions of the Golden Age, the Blessed Isle, or the

Favored Class, which was or is free of psychiatric disorders. Observations in 30 different countries indicate that the reservoir of psychopathology is of the same order in every large population the world over.

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MANIC-DEPRESSIVE ILLNESS IN ISRAEL

JOZEF PH. HES, M.D.¹

On occasion of the 10th anniversary of the Talbieh psychiatric hospital we decided to survey all the manic-depressive patients hospitalised during the years of its existence. The first difficulty we met was in defining the concept manic-depressive illness. We could not include every psychiatric disorder accompanied by more or less severe mood swings, because few of them occur without any mood disturbance. The definition given by Mayer Gross, *et al.* (12) seemed too general: he includes, in addition to manic-depressive illness in the strict sense of the word, also involutional psychosis and the cyclothymic constitution. Involutional psychosis has a heredity and a pre-psychotic personality different from that of manic-depressive illness. We did not include cases of cyclothymic constitution because the leading symptomatology was different *e.g.*, schizophrenic. In our study the illness is characterised by mood swings occurring in waves and/or alternately, in the absence of symptoms such as hallucinations or personality deterioration. In our opinion the clinical picture was very important in selecting the patients. Each case possibly due to reactive factors or suspicious of schizophrenia was excluded.

One finds in the literature different and contradicting opinions concerning manic-depressive illness and its incidence in certain groups *e.g.*, Jews, women, upper social strata (8, 9, 12), Hutterites (4), Negroes (19) *etc.* Among native born Americans the disease appears to be rare in contradistinction to immigrants (16). In the older German psychiatric literature one finds the opinion that manic-depressive illness is a typically Jewish psychosis, a point defended in 1957 by Kalmus (7) in his study on data of Israeli patients.

Heredity plays an important part in the causation of the psychosis; however, Cohen, *et al.* (3) emphasize the part played by

special social conditions *e.g.*, membership in a minority group, unusual economic status and particular illness.

PROCEDURE

In our study we investigated the incidence of manic-depressive illness in the hospital population from November 1949 to December 1958. We compared our results with data on the frequency of the disease in the whole country and with opinions occurring in the psychiatric literature.

We examined 2,684 records of first admission patients during the above mentioned period. Talbieh hospital contains 200 beds, 70 in the male wards and 130 in the female, and treats members of the Workers' Sick Fund from the Jerusalem area and from all over the country. This Sick Fund comprises 62.4% of the total population and includes employers as well as employees. The patients are Israel born, new immigrants and immigrants who entered the country before the establishment of the state in 1948. From each record we noted the name of the patient, country of origin, year of birth, year of immigration, sex, family status, data on heredity, particulars about the disease, its way of starting and the clinical picture.

RESULTS

We found that among 2,684 patients there were 100 manic-depressives according to our diagnostic criteria mentioned above; 62.6% were females, the rest males. Of the 100 manic-depressive patients 65% were females, the rest males: 12 were Israel born, 83 came from Europe and the Americas, 5 from Africa and Asia.

Table 1 gives the country of origin of the 2,684 patients.

Of the 88 immigrant patients, 70 entered the country before the establishment of the state in 1948, 16 came to Israel in 1948 and onwards. On two patients there were not sufficient data.

Data on heredity were rather incomplete

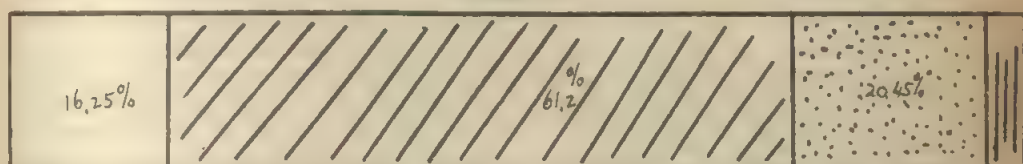
¹ From Talbieh Psychiatric Hospital, maintained by Kupath Holim, (Workers Sick Fund) and affiliated with the Hebrew University Medical School and Hadassah, Jerusalem, Israel. Present address: 45 George St., East Haven, Conn.

TABLE 1

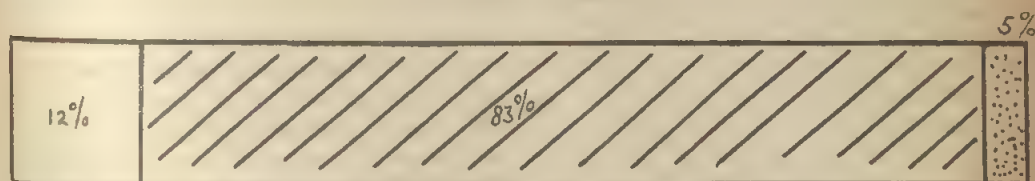
2,684 FIRST ADMISSIONS IN TALBIEH HOSPITAL DURING THE YEARS 1949-1958
ACCORDING TO THE COUNTRY OF ORIGIN

Country of origin	Female	Male	Total
	%	%	%
Israel born	9.4	6.85	16.25
Jews from Europe & Americas	41.0	20.2	61.2
Jews from Africa & Asia	11.1	9.35	20.45
Unknown	1.1	1.0	2.1
Total	62.6	37.4	100.0

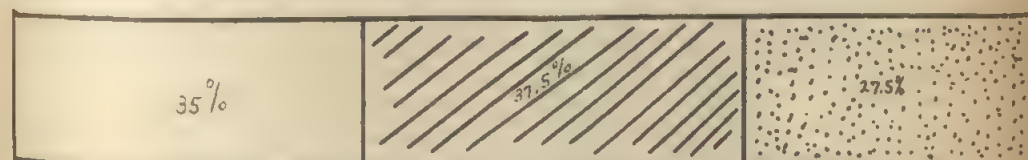
GRAPH 1



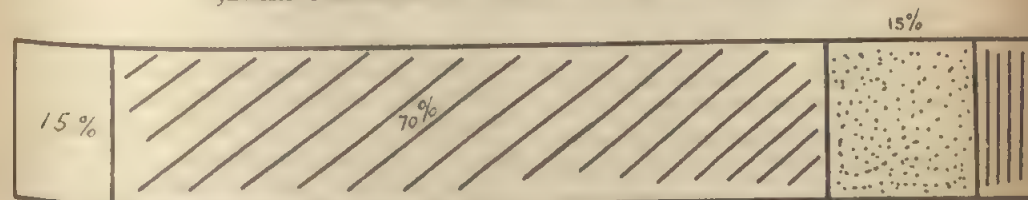
2,684 FIRST ADMISSIONS IN TALBIEH HOSPITAL DURING THE YEARS 1949-1958 ACCORDING TO COUNTRY OF ORIGIN



100 MANIC-DEPRESSIVES IN TALBIEH HOSPITALIZED DURING 1949-1958 ACCORDING TO COUNTRY OF ORIGIN



JEWISH POPULATION BY COUNTRY OF BIRTH 31 XII 1956



745 MANIC-DEPRESSIVES AND MIXED DISEASE DISCHARGED DURING 1957 FROM PSYCHIATRIC INSTITUTIONS IN ISRAEL

Israel-born	Eur. & Am.	Afr. & Asia.	Others, unknown.

is almost always the case in an immigration country. If one considers the presence of mental disturbances in the families of the patients, also disorders which do not require hospitalisation, as a positive finding concerning heredity, then our results show among 100 patients, 52 victims of heredity. Negative findings were recorded in 30 cases and on 18 cases there were not sufficient data.

In eastern patients *i.e.*, those from Africa and Asia, the average age of onset in the case of the 4 females was 22.6 and of the only male patient 50 years.

In western patients *i.e.*, those from Europe and the Americas, the average age of onset in females was 30.0 and in males 29.9. It appeared that the incidence of the disease was rarer among eastern and Israel born Jews than one would expect from the composition of the hospital population. Likewise the disease was more frequent in western Jews than was expected according to their representation in the hospital population.

Turning to data concerning the whole country we find that in the year 1957 the population of Israel consisted of 1,667,455 Jewish inhabitants of which 35% were Israel born, 37.5% were Jews from Europe and the Americas and 27.5% were from Africa and Asia. The frequency of manic-depressive illness and mixed diseases was higher in the immigrants from Europe and the Americas. Of 745 patients discharged from mental institutions all over the country in 1957 there were 70% immigrants from Europe and the Americas whereas only 15% came from Asia and Africa. (See Graph 1.)

DISCUSSION

It is worthwhile to point out that we are faced with the especial difficulty of comparison with data from other countries. This is due to different indications for hospitalisation, different conditions and customs regarding hospitalisation of patients, differences between the several countries, between various periods and between diverse social classes. In the Hutterites, for example, exists a high morbidity against a very low hospitalisation rate as a result of the special socio-religious way of life in this community.

To the difficulty of defining the disease we referred already. In our investigation we examined only cases of manic-depressive illness in the strict sense of the word, whereas the data about Israel as a whole refer to manic-depressive combined with mixed disease and involutional psychosis.

Our results comprise new findings and others which are not outstanding such as the fact that among 100 manic-depressives there were 65 women. This finding is in conformity with data of the literature: Kraepelin(8) mentions 70% females, Kraines(9) 61.7%, Lundquist(11) 61.5%. Mayer Gross, *et al.* likewise mention this fact but does not agree with Rosanow who, "aiming at an explanation of the higher incidence of the illness in females, suggested that a sex-linked dominant was involved." Neither does Mayer Gross accept that the aberrant form in which the disease occurs in men, *e.g.*, recurrent alcoholism, can account for the whole of the differences between the sexes.

As to the age of onset, we found age 30 considerably lower than most of the authors found: Cassidy, *et al.*(2) mention 41.2 as the average age of onset in males, 41.4 in females. Kraines states that in his private practice the age of onset seems to be much lower. Patients paid their first visit at the age of 30-34; however, the first attack of manic-depressive illness started even at an age as low as 25-29 years, a finding which agrees with our results.

We found the incidence of the illness in Israel lower than the average incidence in the literature with the exception for Finland. Kraines(9) mentions an incidence of 4:1000, Mayer-Gross 3-4:1000. In Israel² we computed a number of 0.4:1000. This number is surprising because of the opinion generally accepted that the disease is more frequent among Jews(12, 13). Even if we take into account only those Jews coming from Europe and the Americas, the incidence does not surpass the rate of 0.8:1000.

How to explain the low morbidity in Israel? One has to take into account that the rate 0.4:1000 is related to hospital

² Basic data on patients discharged from psychiatric institutions 1957 by H. S. Halevi M.A., Asst.-Director-General (Planning) Ministry of Health, State of Israel, Jerusalem 1959.

cases only. Without doubt many patients did not receive institutional treatment because of shortage of beds. In addition no small number of depressives received ambulatory ECT. Roberts and Myers (17) who observed the decreasing morbidity of manic-depressive disease among U. S. Jews during the last decades, believe that "acculturation of the Jewish family to America, has tended to play down the accentuation of feeding" which, according to the authors, "has been an important factor in the causation of affective illness among Jews."

It is worth mentioning that Halperin (5) already in 1938 found that manic-depressive disease is more frequent among non-Jews in Palestine than in the Jewish population.

We found the disease rarer among Jews who have immigrated from Africa and Asia than in those coming from Europe and the Americas. It is stated in the literature that a low incidence occurs in Negroes of the Gold Coast (19), in rural Negroes in the U. S., in the Japanese and in the Kenya Africans (17). In relation to these observations we have to mention that the eastern Jews under the existing conditions in Israel, belong to the lower socio-economic classes. Modern technical changes did not penetrate into their communities as they did in western groups. It would be interesting to investigate in another few decades the incidence of the disease in eastern communities in order to find out what role acculturation played in causation.

It is possible that the high incidence in western Jews is explained by the facts put forward by Cohen, *et al.* (3). Cohen points out that in the patients treated by him and his co-workers "each family background was set apart by some factor which differentiated it from others in the surrounding milieu (membership in a minority group, unusual economic status, particular illness)." The patients "were expected to conform to high standards of behavior, based on the family's concept of what the neighbors required."

If these circumstances merit the importance Cohen attaches to them, we should expect then, a higher incidence among eastern Jews in Israel. But probably this group has been living too short a time under

these particular circumstances to experience their influence.

An interesting study in this field (4) describes the Hutterites, a religious group of 9,000 people living in 70 collective settlements in the U. S. and Canada. These Hutterites are very tolerant towards mental patients. Among them is an extraordinarily high incidence of manic-depressive disease. Two circumstances which may offer an explanation are the following:

1. A high amount of inbreeding because marriage outside the group is forbidden. In consequence of this inbreeding one sees an accumulation of hereditary factors, which may favor the incidence of the disease.

2. Because of their religiosity the Hutterites suppress all aggressive tendencies. Likewise they refuse regular army service. It is possible that as a result of this suppression one sees the development of an extremely severe superego and accordingly more guilt feelings and depressions.

Pollock (16) in his study from 1930, found a higher incidence of affective disorders in immigrants than in native born Americans. Likewise we found a higher incidence in immigrants than in Israel born. The higher incidence in long-stay immigrants may be explained by the fact that immigration before 1948 consisted almost exclusively of European Jews. The great influx of immigrants from Asia and Africa into the country came about 1951.

SUMMARY

The author surveyed 100 manic-depressive patients hospitalised in Talbieh Psychiatric Hospital, Jerusalem, during the years 1949-1958. These 100 patients are divided into 3 categories: 83% Jewish immigrants from Europe and the Americas, 5% from Asia and Africa and 12% Israel born. Seventy percent were long-time immigrants whereas 16% were newcomers.

Data were also presented about 745 manic-depressives, who were discharged from psychiatric institutions all over the country during 1957. The incidence of manic-depressive disease was compared with data from the psychiatric literature.

The incidence in Israel, according to the

number of depressed patients during the year 1957 was 0.4/1000 whereas the incidence in the average population on the whole world is 3.4/1000. The author presented hypotheses concerning this observation.

CONCLUSION

According to our data, manic depressive illness is not more frequent among Israeli Jews than in any Gentile population. In Israel the incidence is higher in Jews coming from Europe and the Americas than in Jews from Africa and Asia.

Heredity plays an important part in causing the disease, however, and research in the field of anthropological and environmental factors seems very desirable.

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CHILD PSYCHIATRY FACILITIES IN MOSCOW, RUSSIA

GEORGE H. KLUMPNER, M.D.²

On July 9, 1959, I visited a psychiatric hospital for children in Moscow, Russia, with an internist from Cornell Medical School. Our conversations were carried on through an excellent interpreter assigned by Intourist who made the arrangements for our visit.

The children's section of the hospital was located close to an adult mental hospital on the outskirts of Moscow. The architectural style of all the buildings was similar to that of the state hospitals built in this country during the 19th century, and I was surprised to learn that the children's hospital, which looked as if it could easily have been one hundred years old, was built in 1938 specifically as a children's psychiatric unit.

The patient-staff ratio was quite favorable. For 240 children there were 120 registered nurses, plus 25 student nurses, and 65 maintenance personnel. There were also 17 full time child psychiatrists. On the whole, the hospital had a gloomy atmosphere. Wards were large with 20 to 30 children in each ward. There were no facilities for the children's personal belongings. We wore white coats as we toured the hospital and were shown the kitchens, the wards, the dining rooms, and a darkened room where 20 children were receiving electro-sleep treatment.

Electro-sleep treatment is given to children with chorea and encephalitis, as well as to schizophrenic and neurotic children. Schizophrenics are also treated with vitamins and insulin. The neurotic children are not, as a rule, given insulin. In addition to these somatic treatments, the staff considered the ward experience to be therapeutic. They were very proud of their large garden in which the children could work as a therapeutic activity. They were also quite proud of their small zoo which included a donkey, foxes, and monkeys.

We spent over 3 hours with 7 Russian

child psychiatrists, all women over 40 years of age. We asked if all child psychiatrists in Russia were women. They said this was true in Moscow, for they felt that women naturally liked children and consequently were well suited to the work. However, they said that all of the child psychiatrists in Leningrad were men, but offered no explanation for this odd fact.

The training of psychiatrists in Russia is somewhat different from our own. Following graduation from high school, they spend 6 years in medical school, and then work as general physicians in a clinic for 2 or 3 years. They next have 6 months training in adult psychiatry, after which they continue working in psychiatry. They return for training periods of about 5 months each 2 to 3 years thereafter.

The doctors with whom I spoke read regularly every issue of both *The American Journal of Psychiatry* and *The American Journal of Ortho-psychiatry*. They found the former much more helpful to them in their work with children. They felt that *Ortho* contradicted their interests through its psychoanalytic emphasis; however, they said they found *Ortho's* case descriptions interesting.

After touring the hospital, we were served tea, caviar sandwiches, and oranges in an outdoor pagoda. Here we talked for about two hours on the subject of neuroses in children and their treatment.

These doctors explained neuroses in accordance with Pavlovian theories, i.e., that neurosis follows a psychological shock to the nervous system. Even a slight shock may be sufficient if the nervous system has been weakened. They frequently see children after some physical illness (or children whose physical development has been retarded) and they feel that these children are very susceptible to neuroses because their nerves have been weakened as a result of the disease process. In listening to them discuss various cases, it seemed that in every case they were able to elicit a history of earlier illness to which they attributed etiologic significance.

¹ Read at the meeting of Illinois Psychiatric Society, Nov. 18, 1959, Chicago, Ill.

² 642 Gunderson Avenue, Oak Park, Ill.

The presenting symptoms of some of their hospitalized neurotic children included sleep or speech disturbances, tics, reactive depressions, agitation, phobias, and stubbornness.

I experienced some difficulty getting the doctors to discuss their ideas about psychotherapy with children. In most instances, they said they used rather forceful, positive suggestion to the child two to three times weekly, and they not infrequently used hypnosis.

They presented a case of an 8-year-old girl, who was referred with a diagnosis of "mutism." At the time of admission she spoke in a low voice, and had the social maturity of a 6-year-old. She was the youngest child in the family and had been spoiled. She had 2 older sisters who had misbehaved and when she told her parents about their misbehavior, got them into trouble with the parents. Her sisters then beat her and shouted at her that she must not tell her parents when they did bad things. Following this experience, the child lost her voice. The staff felt that the nature of the symptom was over-determined because the girl had had a cold, with a sore throat at the time. This, they felt, determined the type of her symptoms.

The patient was seen daily on rounds and three times a week in private interviews lasting about 40 minutes, where suggestions and hypnosis were used. During the first interview the psychiatrist tried to convince the little girl that she should speak only with her doctor and it was only necessary to speak in a whisper. When she gradually began to follow these instructions, the doctor introduced her to other people to whom she could also speak. Her therapist applied some electricity to her larynx, so that she would be able to feel her tongue and the way in which it was supposed to work.

When this patient played with the other children in the ward, she would play that she was the teacher. Because of this tendency, the doctors contacted the child's teacher at school and worked out a plan whereby the little girl would be made an assistant teacher when she returned to school.

The patient had been in the hospital a little over a month. Her speech was becom-

ing louder and she was now able to speak with anyone. She liked to read and was therefore assigned to read to two other children in the hospital. Such an assignment fitted in with the doctors' concept that everyone in the hospital should help the doctors.

The hospital regularly arranges programs in which the children perform for their parents on visiting days. After this patient had been in the hospital for a time, she said that she wished to recite a poem on such a program.

The psychiatrists' work with the child's parents was essentially manipulative. Normally, parents were allowed to visit their children twice each week, but with this particular patient the parents were allowed to visit any time they wished, and they were given an excuse from their work for this purpose. Before this patient is discharged, the doctor will give the parents an explanation for their daughter's difficulty and tell them that since the girl is coquettish and enjoys reading, they should support these positive character traits.

The patient was still speaking in a whisper and her current therapy was directed to this problem, with the doctor persuading her that she must prepare herself for school, and suggesting that she would be able to speak by September, then only 7 weeks away.

These Russian child psychiatrists used play therapy only with pre-school children. Since this patient was of school age, no toys were used during the interviews. They felt that they had made an exception to hospital policy in giving her a doll, which she kept with her all the time.

The patient was presented to our group and was asked to recite her poem for us. She did so with a raspy voice. After this her therapist asked her about 15 questions, each one of which seemed to have a built-in answer. For example, she was asked if she was a good girl, and her answer was "Da."

"Do you like animals?" "Da."

"Do you like the monkey?" "Da."

"Did you speak when you were at home, i.e. before you came to the hospital?" "Nyet."

"Are you feeling better now than you

did when you first came here?" "Da."

"Which one of your sisters do you not like?" At this question the patient hung her head. The only spontaneous thing the child said was, "I want to go home."

The diagnosis for the little girl was "nervous in the form of mutism."

When I asked about the child's apparent immaturity, they dismissed this as being clinically insignificant and said that she was immature because she was the youngest of 6 children and was used to being treated like a baby.

We also discussed the Russians' system of outpatient psychiatric clinics. The Moscovites have a wide network of general medical clinics in all sections of the city, and each of these clinics has a child psychiatrist assigned to it. In addition, there is a special clinic for psychiatric patients only, with speech therapists and child psychiatrists on the staff. Finally, there is a central psychiatric clinic staffed by professors from the medical school, and the more difficult cases are sent there.

The outpatient therapeutic program in these clinics includes the use of tranquilizers, vitamins, electro-sleep, and speech therapy. When I asked the doctors about psychotherapy, they said that sometimes they educate the parents by telling them what to do, and they will also have a conversation with the child, trying to get him interested in some new activities. They frequently refer children to the Pioneer's Clubs and also work very closely with the schools in trying to get them to work out special programs for the child.

When I asked about delinquency, the answer was, "Nyet." They state that they do not have any young delinquents. The 16 to 18-year-olds are grouped with the adult offenders who are seen by prison psychiatrists rather than child psychiatrists. They hold that delinquency in a child under 16 years of age is very rare, perhaps one case in 4 or 5 years.

I asked about school phobia, which they said is also very rare. When it occurs, they felt it was because the child was too young to go to school or too infantile, so they let him stay at home another year. They did not see school phobias at the time children enter secondary school; and I suspect

the reason for this is that the children with such difficulties enter the labor market.

They also deny any problem with bright children who do not learn. In part, the theme here was that everybody in Russia wants to learn, but it also developed that they used no standardized psychological tests in Russia: consequently, children are not identified by this means. The other way in which under-achieving students might be identified, through the school teacher, would also not necessarily bring them to light since such problems are considered to be due to inadequate teaching.

Further inquiry about the matter of psychological tests revealed that they do not use the "Binet" or any modification of it, nor do they use the Rorschach. They do use association tests, and they speak of intelligence tests in which they will give a child a task to do. However, these tests are not standardized and apparently they depend, to a large extent, upon the subjective impressions of the examiner.

They do not have any social workers on the team, "since all citizens of the Soviet Union are considered social workers." Nor do they have any foster home program, and dependent children are placed in institutions if they are not adopted. The child psychiatrists have no part in these programs.

I had heard that there was some private practice of psychiatry in Russia, and when I asked about this they laughed and said, "Nyet," in such a spontaneous way that it suggested they really did not believe such existed. They said that private practice existed only in the field of dentistry. John Gunther in *Inside Russia Today* and Thomas Hammond in the September, 1959 *National Geographic Magazine* both state that there is some private practice of medicine in Russia.

These Russian psychiatrists' objection to psychoanalysis was that they did not consider it a scientific theory. When I asked what they meant by this, they said that they feel that Freud considers sex only, and that they are not able to see this sexual material in their patients. My feeling was that they couldn't very well expect to see it since they do most of the talking and rarely give

the perfect opportunity to talk at length and privately.

My visit with these 7 Russian child psychiatrists, two of whom were professors in charge of post-graduate training in child psychiatry in Moscow, was very pleasant. All were friendly and seemed to be genuinely interested in children. They eagerly participated in our talks and seemed to have a strong desire to share experiences. They asked questions of me for almost an hour, and listened to my answers with interest. When I told them that we would be more inclined to consider the nature of the psychopathology underlying the little girl's symptoms, I would feel that the sister's attack was a precipitating event, rather than the causative factor in her neurosis, and that we would probably evaluate her immaturity in terms of the mother-child relationship, they listened as if they had heard similar formulations before, but were not impressed.

One final word to emphasize a situation in Russia much different from any that I know of in this country. In talking with a Georgian high school teacher of English about some of the academic and behavior problems he runs into, I learned that they quite consistently deal with these problems along the following pattern. (Incidentally, such problems are not referred to child psychiatrists. They are dealt with by the teachers and school administrators.) Everyone in Russia belongs to a number of different organizations; the workers in the factory have an organization, the students in each grade have an organization, the teachers have an organization, the parents of the school children have an organization, and so on. When a student is having a

problem, this will be brought to the attention of as many as 4 or 5 organizations in which the child and his parents belong. Each organization will begin formulating a program to help him out. Frequently when children are having trouble at school, the workers' organization at father's factory will be informed and will attempt to work out some form of environmental manipulation for the child. His problem will also be discussed at the organization meeting of his schoolmates, who will try to formulate some helpful program. The parents at the school "P.T.A." organization will be informed, as will the teachers' organization, and so on, so that the child will have a number of groups all expressing concern about him and trying to be helpful in various ways. They maintain that the results of this usage are very encouraging. When a student has difficulty, everybody gets together and tries to find out what he likes to do (athletics, chess, drama, dancing, music, handicraft) to help him foster this interest.

If a child is doing poorly in school, his teacher is the one who is held responsible. The teacher is also considered responsible if the child is truant.

The teacher also sees the parents of problem children every week, and sees the parents of all the children in his classes at least once each month. Many of these contacts are home visits, and the teacher I talked with, said that he knew the parents of all his students quite well.

I appreciated the opportunity to exchange views with these Russian child psychiatrists. The warm climate of our professional interchange was both pleasant and encouraging.

EXTRA-SCIENTIFIC INFLUENCES IN THE HISTORY OF CHILDHOOD PSYCHOPATHOLOGY

M. B. MACMILLAN, B.Sc.²

INTRODUCTION

Examination of 19th century literature relating to psychosis in childhood shows that the psychotic child was an object of study in the first part of the century, and that a substantial body of knowledge on the subject was accumulated in that period. Toward the latter part of the century, not only did the level of knowledge decline, but the psychotic child even seems to have ceased to have been an object of study.

The purpose of this paper is to substantiate the above assertion and to examine the scientific and extra-scientific factors giving rise to it.

EARLY LITERATURE ON CHILDHOOD PSYCHOSIS

Spectacular cases of insanity in children have been recorded, of course, since the earliest times. Greding, for example, writing in the late 18th century, cited the following :

A woman, about forty years old, of a full and plethoric habit of body, who constantly laughed and did the strangest things . . . was, on the 20th. January, 1763, brought to bed . . . of a male child who was raving mad. When he was brought to our work house, which was on the 24th., he possessed so much strength that four women could at times with difficulty restrain him. These paroxysms either ended in an uncontrollable fit of laughter, for which no evident reason could be observed, or else he tore in anger everything near him . . . We durst not allow him to be alone, otherwise he would get on the benches and tables, and even attempt to climb up the walls. Afterwards, however, when he began to have teeth he died (quoted by Maudsley, 10. p. 258.)

In general, however, the recognition of insanity in children seems to have been delayed until the various early training

centres for mentally defective children were established. Seguin, in the 1866 revision of his *Idiocy and its Treatment by the Physiological Method*, recognises "incipient insanity" as a cause and complication of idiocy proper. He probably so recognised it in the early edition, which is, unfortunately, unavailable to the writer. For 10 years between 1845 and 1860, Griesinger was the director of "the idiot asylum of Mariaberg" (6). He observed that there, and "in the several institutions recently erected for the reception of children with weak intellect, there are generally found more or less special cases of mental disease." Amplifying this observation, he described psychoses in intellectually normal children, as well as psychotic reactions in defective children.

Griesinger believed that both maniacal and melancholic forms of insanity were found in children ; that is, the recognised range of adult forms was to be found also in children. What was covered by his terms may be clearer from these quotations, firstly, on maniacal conditions :

Sometimes they appear as persistent or even habitual moderate irritability of character : The child is passionately obstinate, quarrelsome, malignant and even inclined to immorality . . . Sometimes it is a state also persistent, but more intense : there is greater restlessness, a constant aimless roving, confusion of the intelligence, perversion of the emotions . . . which . . . sometimes passes into profound mental weakness. It is impossible definitely to distinguish this from the versatile form of infantile dementia :³ these children cannot keep quiet even for a moment ; they talk incessantly and incoherently, pay no attention, constantly wander about, laugh, cry, etc. . . . Sometimes there are . . . attacks of really developed mania (i.e., corresponding to the adult forms).

Among others who would have been included in the category of "maniacal conditions" would be the acting out aggressive

¹ Based upon a paper read at the Annual Conference of the British Psychological Society, Australian Branch, at the University of Melbourne, August, 1959.

² Travancore Clinic, Flemington, Victoria, Australia.

³ By this term Griesinger meant one type of defective child (c.f. *op. cit.*, p. 376).

child, the schizophrenic child and the hyper-active child.

Griesinger believed the melancholic forms to be less common than the maniacal. Under this term he included hypochondria, generalised anxiety, suicidal states, ideas of possession by demons. Delusional states he considered to be absent in childhood as "no persistent ego is as yet formed in which there could occur a lasting radical change; the mobility of this age does not allow insane ideas to become persistent . . ."

The factors causing psychosis in childhood were enumerated by him as follows: cerebral irritability either due to heredity or to injudicious treatment (intimidation, ill-treatment of mind, intellectual over-exertion, dissipation), organic disease processes, sympathetic stimulation of the brain from the genital organs as a consequence of masturbation on the approach of puberty, *etc.* It can be seen that he gives at least equal weight to psychological factors (intimidation, *etc.*) as to physical. This is in line with his more general statement of the causes of insanity. These he divides into the predisposing and immediate, saying of the psychical, that they

. . . are, in our opinion, the most frequent and fertile causes of insanity, as well in regard to preparation as especially and principally the immediate excitation of the disease.

Maudsley, who, after Griesinger, appears to have been the main authoritative writer to have considered the psychotic child, attempted to relate the type of psychosis to the level of development reached by the child. Thus he describes the sensory-motor insanities (the epilepsies, choreic movements associated with hallucinations) and the delusional (related to the development of stable ideas). This scheme is not followed consistently for it is soon abandoned for the adult classification (10). The notion of instinctive insanity is introduced and developed to a greater degree than in Griesinger. Coupled with this, the concept of instinctive degeneration is used to describe the various diseases. In contrast with Griesinger, who at least mentions the possibility of using Seguin's educational methods for treating the maniacal conditions (6), Maudsley says nothing regarding

treatment. Maudsley's discussion of the subject, ambitious as it is, is at a lower level than that of Griesinger. And it is certainly true that those writing after Maudsley reached nothing like the same level.

Ireland's chapter, "On Insanity in Children and Insane Idiots and Imbeciles," of 1877(7) mentions both Maudsley and Griesinger by way of introduction but is little more than a collection of case descriptions. Twenty-three years later his revision of this chapter shows changes only in terminology and systematisation(8). Other writers, like Bucknill and Tuke(3) and Sankey(11) do not mention the subject. With a few notable exceptions, the *Journal of Mental Science* published or reviewed little on childhood psychosis between 1870 and 1900. Beach's paper(2) is one such exception, but, by the time it was published it was as late as 1898. It is of interest that Shuttleworth, in the discussion on this paper, pleaded for sharper distinctions to be made between mental defect and psychotic conditions.

In fact it could almost be said that, after Maudsley, it was not until Sancte de Sanctis described the entity of dementia praecoxissima in 1905-1908(4) was the psychotic child again to become an object of study.

Having now substantiated the assertion that the level of knowledge concerning the psychotic child declined steadily between the early and latter part of the last century we now turn to an examination of the possible reasons for this peculiarity in the development of psycho-pathological studies. The factors determining this development are considered under two headings: scientific influences and extra-scientific influences. Scientific influences are defined as those influences arising solely from the scientific nature of the problem, such as the effects of method of study and general level of scientific knowledge. By definition, extra-scientific influences are those arising outside of these. They include such influences as social attitudes and political views.

SCIENTIFIC INFLUENCES

The main set of scientific influences are to be found in the early history of mental defect. From the standpoint of our present

day knowledge it is clear that the classification of mental defect should be based upon 3 related, but independent, criteria: the educational level (e.g. educable v. trainable), the pathological type (e.g. mongolism, microcephaly), and the assumed aetiology (e.g. heredity, foetal damage, birth injury). Tredgold seems to have been the first writer to have recognised the need for this threefold method of classification. Prior to him, there is obvious confusion on this point(1).

There is also a certain amount of confusion in the recognition given to distinct pathological types. While the micro-macrocephalic distinction was made early (for example by Seguin), and cretinism constituted an entity from at least the time of Guggenbühl, few other distinctions seem to have been made (at least in such a way as to be understandable to the modern observer). Such a distinct type as mongolism, for example, was not recognised until the late 1860's and not generally accepted until some time later(7). Additionally there were a number of instances where one type of mental defect was considered to be the only one(8).

The immediate reason for this confusion and for the failure to recognise distinct pathological types appears to have been the emphasis given to the educational criterion as opposed to the other two. Since the problem is a three-fold one, to emphasise any one criterion of classification means, in the early stage of a science, not to do justice to the other criteria.

Since this early emphasis upon the educational aspect of the problem precluded pathological and aetiological consideration and since the psychotic child resembled the truly defective child in being intellectually handicapped, it is not surprising that the psychotic child did not become, in this early period, an object of study in his own right. Seguin's unconcern with the problem of the psychotic child is explicable on this view.

Griesinger's relatively advanced views on the subject require additional explanation, however. In the writer's opinion, these follow from the fact that, not being primarily an educationalist and not being personally concerned with the training of

the defective child, Griesinger could pay more attention to the behaviour of the children. This allowed him to develop a classification based upon behavioural types and direct attention towards aetiology. Both of these tendencies enabled him to identify the psychotic child.

The gradual loss of emphasis upon the educational aspect of the problem, a precondition for the development of pathological and aetiological studies, probably also resulted in part from the rather crude approach to learning. As the training techniques became exhausted a changed emphasis would follow.

Extra-scientific influences played a part and, as will be seen, determined the peculiarities of the pathological approach which did develop as the educational emphasis waned. They were also responsible for the fact that the initial emphasis was on the educational aspect. These influences are now examined.

EXTRA-SCIENTIFIC INFLUENCES

The extra-scientific influences are of several kinds: directly socio-political, those derived from political influences and those derived from social attitudes.

Direct and derived socio-political influences. It is of considerable interest that Seguin, the main figure in the early history of mental defect, was interested in the problem of the education of the defective child for direct socio-political reasons. Himself a Christian Socialist of the St. Simon school, he saw in his extension of Itard's famous effort to educate the savage of Aveyron (itself based upon the even more radical socio-political views of Rousseau and Condillac), an attempt at

... a social application of the principles of the gospel; for the most rapid elevation of the lowest and poorest by all means and institutions; mostly by free education(12).

For Seguin, the task of educating the idiot was part of the wider movement for the abolition of social classes and the establishment of a just society. He eventually came to feel that his efforts, frustrated in the France of that time, had come to fruition in the stronghold of democratic ideals, the expanding economy of America.

Quite apart from the direct testimony of Itard and Seguin, there is some evidence that the acceptance of the idea of educating the defective child was conditioned by the more general acceptance of the policy of mass education. As Seguin put it,

... it is not enough for an idea to be ripe in the mind of a thinker . . . the social medium in which it falls must be prepared for it as well; otherwise no production ensues from their contact . . . generally the ground rejects the seeds which it cannot germinate, and they are carried . . . to a more genial soil.

Seguin himself claims a relation between the acceptance of the idea of mass education and of the education of the defective. The discussion of Barr(1) and Ireland(8) tends to support this view. At least it is true that, even at the end of the last century, France lagged behind other countries in the provision of facilities for the education of both defective and normal children.

In so far as the movement for mass education had a socio-political basis, this current of influence must be classed alongside the more direct influence of radical thought.

Changes within the educational movement itself seem also to have played a part. It seems reasonable to suppose that as the early optimism about the possibilities of education of defective children gave way to a more realistic (and even pessimistic!) appraisal, some of the earlier impetus would be lost. In France the non-achievement of the goal of mass education seems to have sapped the energies of those concerned with the problem(1). These developments would also have assisted in changing the emphasis to pathological and aetiological matters.

The argument in this section, that extra scientific attitudes determined the efforts of the early educationalists, may be inferentially supported by the history of Zilboorg and Henry(14). Their delineation of what they call the first and second psychiatric revolutions rests upon changes in social and political thinking. More specifically they evaluate Pinel's work against the background of the French revolution, which . . .

awakened everywhere not only the sense of the individual's social responsibility but particularly the sense of the community's responsibility towards its members.

The same feelings of responsibility were clearly held by most of the early workers in the field of mental defect.

It is both unfortunate and curious that Zilboorg and Henry chose to exclude completely the history of the study of mental defect. Unfortunate because some of the points made here may have been otherwise directly substantiated. Curious, because the topic of mental defect was given so much attention by the early writers. Seguin and Guggenbühl, for example, are not mentioned at all. That period of Griesinger's work concerned with mental defect and childhood psychosis (between 1845 and 1861) is simply omitted from their biographical notes. After tracing Griesinger's history up to the publication of *Pathologie und Therapie der psychischen Krankheiten* in 1845, they blandly state

Griesinger did not resume his contact with clinical psychiatry until 1866 when he became chief of the division of mental diseases at the Charite in Berlin.

Yet, as has already been noted, it was precisely during this period that Griesinger had been in charge of "the idiot asylum" at Mariaberg. Perhaps Zilboorg and Henry's neglect of this fact together with the whole field of mental defect springs from their tendency to evaluate the history of psychiatry in terms of the acceptance or non-acceptance of psychodynamic formulations by the earlier psychiatrists. Mental defect is definitely an area where such formulations are of secondary importance to that of the relation between mind and brain.

Influences from changed social attitudes.

Darwin's publication of *The Origin of Species* in 1859 did more than revolutionise the study of biology. Considered either as a cause, or as the consequence of other intellectual developments, it acted as the focal point for the spread of the materialist mode of thought. Not long after it's publication Langdon-Down's ethnological classification was made. Although it soon became only an historical curiosity, it is

of interest in that it demonstrates a direct influence of the materialist-evolutionary thinking of the time upon the distinction of pathological entities of mental defect.

Other, more indirect influences are also evident. The whole basis for the distinction of pathological types became a physical one. Griesinger, whose observations predated Darwin's work, seems for this reason, as much as for those discussed earlier, to pay some attention to behavioural characteristics of defective children. Thus, after discussing the anomalies of perception, of the "desires," of movements, *etc.*(6), he distinguishes "two fundamental forms" of idiocy :

the apathetic (dull, torpid) and the excited (versatile, agitated). The profound idiots of the first category have frequently an awkward, clumsy and disproportioned body, and repulsive old-looking features; the dullness of their movements, their passiveness—their stupid, monotonous unexcitable demeanour—cause them in many cases to appear as if they were in a state resembling sleep . . . Those of the second category are really (P rarely-M.B.M.) much deformed, but generally remain far behind in their years . . . they are restless in their movements, quick, irritable, rapidly change their impressions . . . It is often astonishing, when we see the happy expression and apparent activity of these children, to find that they are utterly incapable of speech and void of understanding. In many cases the behaviour is often so excitable . . . that it actually appears to pass into mania.

Among later writers, Kerlin (cited in 1) appears to have been the only one who developed this line of approach. Not until Earl revived it in 1934 were the behavioural characteristics themselves made the basis of a typology(5). At the present time interest in the matter has again revived; if one can judge from the titles of papers presented to the 1958 Annual conference of the British Psychological Society in Birmingham.

Another potent influence appears to have come from a changed social attitude (of unknown origin) to children. This may be illustrated by a comparison of the views of Maudsley and Griesinger. Maudsley opens his chapter on "The Insanity of Early Life" with the following words :

How unnatural! is an exclamation of pained surprise which some of the more striking instances of insanity in younger children are apt to provoke. However, to call a thing unnatural is not to take it out of the domain of natural law . . . Anomalies, when rightly studied yield rare instruction . . . For this reason it will not be amiss to occupy a separate chapter with a consideration of the abnormal phenomena of mental derangement in children(10).

To be contrasted with this are Griesinger's straightforward opening remarks :

During childhood (before puberty) insanity is not frequent, but almost all forms of it occur. Those most generally observed are the various kinds of mental weakness . . . next in order . . . come the maniacal conditions . . .

That Maudsley himself did not think it unnatural that children should develop psychoses is implicit in the paragraph quoted. It is more obvious, perhaps, in the following remarks :

To talk about the purity and innocence of a child's mind is a part of that poetical idealism and willing hypocrisy by which men ignore realities . . . ; in so far as purity exists it testifies to the absence of mind; the impulses which actually move the child are the selfish impulses of passion. It were as warrantable to get enthusiastic about the purity and innocence of a dog's mind. "A boy," says Plato, "is the most vicious of wild beasts," or, as someone else has put it "a boy is better unborn than untaught"(10).

Anyone with views like these would surely not be thrown off balance by the development of psychosis in a child. Is not Maudsley actually addressing his readers, the intelligent laymen and the psychiatrists of the day, in the expectation that they will be surprised? If so, the apology reflects a change in reader attitude from Griesinger's time. Some support for this argument may be derived from comparisons between the 2nd. and 3rd. editions of Maudsley's textbook(9, 10). His earlier discussion, of 1868, does not include the topic of the "unnaturalness" of psychosis in childhood. Neither is any comparison drawn between the child and the dog in the earlier passage relating to "purity" of mind. One cannot help wondering if these

remarks reflect Maudsley's protest against the Victorian attitude of sentimentality toward children; an attitude leading to a denial of the possibility of childhood psychosis.

CONCLUSION

Hence, extra-scientific influences determined early interest in the problem of the defective child. Either of a direct or indirect socio-political character they created a field of study which included the psychotic child. However, because their influence was an educational one, the psychotic child, along with other pathological entities, was not distinguished as such. Only after the educational emphasis had changed were the conditions created for the emergence of the psychotic child as an object of study. But this did not happen when the change took place. The emergence of the psychotic child as an object of study was further delayed by the physical emphasis of those interested in establishing pathological typologies. As has been shown, this was dependent upon extra-scientific factors, notably the strength of the mechanist materialist mode of thought. The differences between the views of Griesinger and Maudsley seem to have been determined by the fact that the former's outlook was constricted neither by his mode of thinking nor by the changed social attitude to children.

SUMMARY

This paper attempts to account for the peculiarities in the development of 19th century knowledge of the psychotic child in terms of both scientific and extra-scientific factors.

It is argued that extra-scientific factors determined the early interest in the de-

fective child with whom the psychotic child was first classed. A combination of both scientific and extra-scientific factors is claimed to account for the almost complete lack of interest in the problem in the second half of the century. An attempt is also made to account for the differences between the views of Griesinger and Maudsley.

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PRECISION IN PSYCHOANALYSIS

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The purpose of this paper is : (a) to show that precise definition of terms is necessary if psychoanalysis is to become more scientific and useful, and (b) to demonstrate two contrascientific trends within classical psychoanalysis resulting from its lack of precision : a refusal to face facts, and a tendency to retreat to a therapeutically-nihilistic "elite" status(1). These retreating trends tend to evoke hopeless abandonment of the interpersonal search for the cause and cure of mental illness, thereby leaving the field to chemists, geneticists and physiologists whose tools, though refined, appear unsuited for the analysis of human feelings and mental illness.

We shall first attempt to define the word "scientific," and to indicate the role of precision in scientific work. Second, we shall examine a recent classical psychoanalytic conceptualization to demonstrate its lack of precision and its unverifiability. Third, we shall try to show that a scientific reformulation of this conceptualization may make experimental and clinical verification possible. Fourth, we shall examine Freud's metaphorical method to show that it lacked precision and frequently confused reiterated hypotheses for proved facts. Finally, we shall examine Freud's unscientific justification of his opposition to precise definitions, and shall seek the consequences in American classical psychoanalysis today.

WHAT DOES "SCIENTIFIC" MEAN ?

The Merriam-Webster Unabridged Dictionary defines "scientific" as "conducted . . . strictly according to the principles and practice . . . of exact science, especially as designed to establish incontestably sound conclusions and generalizations by absolute accuracy of investigation."

The phrase "incontestably sound" includes the basic concept of verifiability. Descartes' scientific concept of how the brain worked, as the neurophysiologist H. S.

Magoun notes(2), "was so clearly put as to possess the danger of permitting easy determination of its truth."

If "scientific" means "conducted according to the principles and practice . . . of exact science," we can examine the practice and principles of an exact science for guidance. Nobel Laureate Robert A. Millikan(3), writes :

The first principle of the physicist, when he uncovers a new phenomenon, is to determine *what* he is to measure ; the next is to devise *means* to measure it(3a) . . . All scientific investigations which have led to real progress have begun . . . by the treatment of simple and specific problems with quantitative exactness, not by making deductions from general philosophical schemes or *a priori* principles (3b).

One of the cardinal principles of scientific work, therefore, is precision, both in definitions and in measurements.

A RECENT VAGUE PSYCHOANALYTIC CONCEPTUALIZATION

Percival Bailey's recent Academic Lecture(4) criticizing classical psychoanalysis drew an almost definitive reply from Ostow(1), one of the ablest of the classical psychoanalysts. Let us apply the principles of scientific methodology which Millikan has just described to one of Ostow's key statements.

As a hypothesis, Ostow offers the psychoanalytic proposition that "*every man has a tendency to enjoy a physical, sexual relationship with his mother.*" Verification of this statement requires, as Millikan indicates, determining *what* is to be measured, and then determining *how* it is to be measured.

As is unfortunately so frequent in psychoanalytic statements, many words in Ostow's hypothesis have rather vague meanings. His use of the word "every" would mean the proposition disproved if one man on earth lacked this tendency. Does the word "man" mean an adult male, or does it mean *all* human males, or does

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mean all young human males, i.e., boys? I believe Ostow is really referring to boys rather than to men.

But the key word in Ostow's hypothesis is "tendency"; what does it mean? The total proposition cannot be scientifically examined until we know what this "tendency" is which we are measuring and against what yardstick.

The word "tendency" itself is an example of the fuzziness of definition so frequently seen in psychoanalytic writings. A "tendency" has a self-initiated effluent quality quite similar to that present in the psychoanalytic concepts of wishes, drives, impulses and instincts. But all these effluent concepts have two separate aspects: that which is either innately or experientially responsive to stimuli, and that which is mystically self-propelled, as were Freud's life and death instincts. Failure to distinguish between the responsive and self-initiated aspects makes Ostow's meaning rather unclear.

For the sake of discussion, let us assume we know what Ostow's "tendency" means. How do we verify its existence?

We are usually told that the hypothesis is validly confirmed by patients' productions in psychoanalytic treatment. But Grinker(5) denies that such confirmation is valid. He says:

Using the tools of psychoanalysis, (psychoanalysts) find what they search for and little else. . . . The patient is the psychoanalyst's biased collaborator. Each interpretation may be a hypothesis . . . but there are no alternatives and little possibility that the patient-collaborator will refute it, although theoretically much is made of the patient's behavior as an index of correctness or refutation of interpretations. We have demonstrated in our experiments . . . (that) the patient-subject interprets almost everything that the psychiatrist states as having therapeutic meaning. The patient is not an unbiased scientific colleague.

Verification of a psychoanalyst's hypothesis by his patients' responses is, therefore, not a scientifically valid, independent confirmation of the hypothesis, particularly when the analyst determines whether the student-patient progresses in his course of psychoanalytic training. In-

stead, it may well be part of a closed philosophical system.

What other means are there of direct verification of hypotheses such as Ostow's? Is selecting(4a) "from a mass of data of observation those items which support (one's) thesis" worth while? Such a selection is valid in the formulation of hypotheses, but not valid in proving them.

Isaac Newton(6) pointed to the lack of validity of "proofs" arrived at by such selection of data. He wrote:

The best and safest method of philosophizing certainly seems to be, first, to inquire diligently into the properties of things, and to establish these properties by experiments.

Psychoanalysis has had relatively few such experiments. Newton continues:

Then, [one should] proceed more slowly to hypotheses for the explanation of them. For hypotheses ought to be used only in explaining the properties of things, and ought not to be assumed for determining them, *except where they are able to furnish experiments*. For if from the possibility of hypotheses alone, anyone makes a conjecture concerning the true nature of things, I do not see by what means it is possible to determine certainty in any science, since it is always possible to devise any number of hypotheses, which will seem to overcome new difficulties.

Hence, selection of data to fit a hypothesis by no means proves it; confirming a hypothesis is more important than, and should precede, elaborations upon it.

Is the "general opinion" of the correctness of psychoanalytic concepts proof of its validity? If this were so, the earth suddenly became spheroidal in 1492, after having previously been flat, and no one needed psychoanalytic aid before Freud appeared. "General opinion" therefore lacks validity as scientific proof. Consequently we must conclude that there are no direct proofs for the validity of Ostow's imprecisely formulated psychoanalytic hypothesis.

The only indirect proof for the classical psychoanalytic hypotheses lies in the value of the procedure in helping patients. Yet Teuber(7), discussing the Cambridge-Somerville experiment, points out that "the burden of proof is on anyone who claims

specific results for a given form of therapy. But when the American Psychoanalytic Association examined its members' treatment results, it could not prove the value of the classical psychoanalytic treatment. Weinstock, chairman of the survey committee, stated (8), "It is not that the figures can be used to prove analytic therapy effective or ineffective." Hence indirect therapeutic proof of the classical psychoanalytic hypotheses is also lacking.

Consequently, there is no proof, direct or indirect, for Ostow's imprecisely formulated psychoanalytic Oedipal hypothesis.

A VERIFIABLE REFORMULATION OF THE OEDIPAL HYPOTHESIS

Is there sexual attraction (a more precise formulation than "a tendency to enjoy a sexual relationship") between a boy and his mother? I believe there is, because there are apparently inborn sexual responses in all of us to members of the opposite sex which may well be mediated outside of conscious awareness, and at least partly through the sense of smell (9). Since the mother is the female with whom the boy has most contact, his inborn sexual responses will probably be directed mostly toward her, but there may well be a corresponding unconscious sexual response on her part toward him as well. These concepts, unlike classical formulations such as Ostow's, can perhaps be experimentally tested and quantitatively measured. But until such testing confirms them, they must be regarded as hypotheses only, no matter how many times our patients may confirm them, unless, perhaps, it can be clearly shown that using them is statistically helpful in accomplishing cure.

AN EXAMPLE OF FREUD'S METAPHORICAL VAGUENESS

Let us now examine an example of Freud's metaphorical method, to see the lack of precision characterizing much of his work. That this led to later mysticism, with life and death instincts in eternal unverifiable conflict, is well known. We shall, however, take an example from the more scientific early part of his career.

In his "Interpretation of Dreams," he discusses the behavior of a hungry infant and states (10), "nothing prevents us from assuming that there was a primitive state of the psychical apparatus . . . in which wishing ended in hallucinating." In this connection, let us recall Newton's statement (6) that "it is always possible to devise any number of hypotheses which will seem to overcome new difficulties."

Freud maintains, essentially, that since the baby has been fed before, when he is again hungry, the memory image of the previous feeding might be experienced as a hallucination. But there is quantitatively a far cry between the memory trace of a previous feeding in a two-day-old baby, and the relatively adult quality of a hallucination. An hallucination of milk involves the anticipatory differentiation of milk from non-milk, something utterly beyond the capacity of a two-day-old infant. Moreover, while perhaps (10) "nothing prevents us from assuming" this hallucination, scientific method demands, as Newton (6) points out, that such hypotheses "ought not to be assumed for determining (the properties of things), *except where they are able to furnish experiments.*" In the 50 years since Freud's assumption of infantile hallucinations, what experiments have been made to prove or disprove them? Yet this and many other unprovable assumptions continue to be accepted in psychoanalytic thinking because one great man postulated them.

But here, and elsewhere as well, Freud's lack of precision led him down an unverifiable and therefore unscientific path. Was this imprecision accidental? Perhaps it was at first, but it was later explicitly justified.

We have seen how Millikan insisted that hypotheses cannot be verified until *after* they have been rigorously defined, and that hypotheses cannot themselves be defined until their fundamental terms and basic concepts have previously been rigorously defined. But psychoanalysis consciously and explicitly declines to define its terms rigorously; it is as if Freud's statements are, *ipso facto*, sometimes exempted from the scientific requirement for objective verification. In reality, however, it is

a long way from "nothing prevents us from assuming" to proven fact.

FREUD'S JUSTIFICATION FOR "ELASTIC" DEFINITIONS

The question of "clear and sharply defined basal concepts" is discussed in Freud's 1915 paper, "Instincts and Their Vicissitudes" (11). His concept of scientific method differs quite sharply from that of the exact scientists already quoted. It also differs sharply from Osler (12), who wrote that "the leaven of science gives to men habits of mental accuracy . . . which enlarge the mental vision."

In his 1915 paper, Freud correctly points out that concepts are changed as a science progresses. Continued investigation reveals conceptual imperfections, and the concepts and definitions are therefore changed accordingly. Because, at the beginning of a scientific investigation, we do not know its final concepts with *absolute* accuracy, Freud incorrectly denied the necessity of precise definition of the *relatively* accurate conceptual tools with which the investigation begins.

When we deal with precisely defined concepts such as Newton's or Descartes', we can fairly easily determine the accuracies and inaccuracies within them. Such determinations result in more precise formulations, which are then subjected to the same evaluative process, leading to still greater precision.

When, however, we have no firm definitions with which to work, we find ourselves without a valid starting point. We are consequently attempting to dissect warm air with empty hands. The fact that concepts and definitions become altered as the result of investigation is very different from the idea that *working* definitions, like scissors, should be elastic.

Hence Freud's statement (11) that "the progress of science demands a certain elasticity even in . . . definitions" is unscientific. Working definitions are points of reference, but not rubber bands; they can be and are changed, but they are not elastic. They become *different* definitions after their alteration, rather than merely being somewhat stretched. A sexually altered dog is sexually quite different from what it used to

be; there is no question of elasticity whatsoever. Just as an oak is quite different from the acorn from which it has grown, so is an hallucination quite different from an infantile memory trace.

But, it might be said, psychoanalysis differs from physics and mathematics inasmuch as it deals with the unconscious, with feelings and with instincts. Ernst Mach (13) categorically rejected abdication of scientific method to the "instinctive." He wrote:

Instinctive knowledge is very frequently the starting-point of investigations. . . . This by no means compels us, however, to create a new mysticism out of the instinctive in science and to regard this factor as infallible. That it is not infallible, we very easily discover. . . . The instinctive is just as fallible as the distinctly conscious.

Freud failed to separate meticulously the mystical, self-initiatory aspects in his concept of instinct from its scientific responsive aspects. This failure, continued by some of his followers, has helped lead to the pessimistic religious trend which has pervaded much of classical psychoanalysis for so long. Indeed, the psychologist Joseph Lyons (14) recently noted that

If there is one all-pervading faith that binds twentieth century western man, it may be found in his uncritical acceptance of the value of psychotherapy. If there is a universal answer offered in these times for the anxiety that is supposed to be the mark of the age, it lies in the role of the patient in psychotherapy. It is our new religion, arising out of and efficiently tailored to the moral crisis of the day.

THE RESULTS OF IMPRECISION IN CLASSICAL PSYCHOANALYSIS TODAY

Freud's refusal, continued by his followers, to define terms meticulously has led, in part, to the rather poor estimation other scientists hold of psychoanalysis. James R. Newman (15), author of *The World of Mathematics*, recently reviewed a new psychological and psychoanalytic dictionary. Referring to these fields, he wrote:

A discipline cannot live without words, but words can corrupt and destroy it. This explains the importance of good science dictionaries, which are as much works of criticism as they are guides to usage. No subjects are in greater need of such services than psychology

and psychoanalysis. The vocabularies of both these wildly flourishing branches of study are plagued by amateurishness, pretentiousness and a general professional weakness for fancy terms. As Goethe wrote in *Faust*, "When ideas fail, words come in very handy."

This is one example of an exact scientist's view of psychoanalysis today.

Percival Bailey (4a), the distinguished neurosurgeon happily turned psychiatrist, wrote :

I know that there are attempts to prove that psychoanalysis is a science. They do not convince me and have convinced very few objective observers (4b). Even Freud (4c) admitted that it is only a sort of post-dictive science, lacking in power of synthesis and prediction. Science cannot be built on the insights of visionaries or on the mutual titillation of interdisciplinary minds at Palo Alto, or elsewhere. Science can be built only by the cautious, laborious verification, step by step, of one's hypotheses, establishing each one solidly before passing on to the next. As Jones says (4d), Freud had no patience with such a method.

This is another example of an exact scientist's view of psychoanalysis today.

TWO UNFORTUNATE PSYCHOANALYTIC RESPONSES

Two important contra-scientific trends can be seen within classical psychoanalysis in response to its general scientific vagueness and to its specific failure to prove its therapeutic effectiveness. The first trend declines to reveal the data about its lack of therapeutic effectiveness, and seeks to rationalize away this anti-scientific suppression of data. The second trend maintains that only a psychoanalytic "elite" are capable of meaningfully evaluating both themselves and their results.

The first trend is exemplified in Weinstock's explanation of the American Psychoanalytic's decision not to publish its survey results. "The material on which either opinion is based (whether or not psychoanalysis is therapeutically effective) is inadequately established, and controversial publicity on such material cannot be of benefit in any way." This fear of "controversial publicity" includes refusal to allow investigators who are not members of the American Psychoanalytic even to see the

report unless they pledge in advance to keep the material "confidential." This is material which has already been circulated to the membership of the American Psychoanalytic, and which has already been described in detail in the *New York Herald Tribune*.

How scientific is this point of view?

Avoidance of "controversy" (i.e., disagreement) and suppression of data because they might support the "wrong" side still occur in politics, but have not been in style in astronomy, for example, for about 350 years. At that time, Tycho Brahe spent 25 years making astronomical observations to destroy the Copernican heliocentric theory. His observations were, however, available to Kepler, who used them to prove the Copernican doctrine, and to place it on a firm foundation.

It would appear to me that the general public and the healing professions in particular would greatly benefit from the publication of the results of treatment at the hands of members of the American Psychoanalytic Association. The Bible says, "The truth shall make you free." It seems to me that the only people to whom "publicity on such material cannot be of benefit in any way" (8) would be individuals who, for some reason, may be afraid of what the truth will show. But science itself is more important than the reputation of any individual scientific worker, or of any particular group of workers.

The second unfortunate trend in classical psychoanalysis maintains that only the psychoanalytic "elite" (1) are capable of meaningfully evaluating both themselves and their results.

The analyzed are an elite . . . in the sense that they have had certain filters removed from their visual apparatus so that they can now see clearly what they previously could not see at all, or could see only with serious distortion (1).

While training analyses are often helpful, ascription of such crystal-clear thinking only to the products of "authentic" psychoanalysis (which Ostow contrasts with the "shoddy perversions and dilutions that usurp its name"), suggests a defensive device more than a statement of scientific fact.

For Ostow's statement to be completely

accurate and for all the filters to be removed, a perfect training analyst would be required. But no human being is perfect.

Indeed, there are data suggesting that the training analysis may even *add* visual filters not previously present. Edward Glover, as "authentic" an analyst as there is, writes (16),

Training analysts' methods of analyzing candidates are influenced by their own character formations and peculiarities, and by the training they (themselves) have undergone. These peculiarities they, in their turn, are quite likely to transvey to their pupils.

I have known several analysts both before their training analyses began and since they have finished them. It seems to me, as an observant friend, that most of them are stiffer, less courageous and less human after their supposedly successful analyses than they were before. Some are members of the "authentic" American Psychoanalytic, and some are not. From my own small sample (hardly enough for a hypothesis, and certainly not for an assertion), those who have been "authentically" analyzed by training analysts of the "approved" New York institutes seem, in general, to be less warm, less spontaneous, less human and far more arrogant than those friends whose analyses were conducted under the aegis of one or another of "the shoddy perversions and dilutions that usurp the name" of psychoanalysis.

If classical psychoanalysts wish to make a secular religious cult of themselves, nobody can stop them, even if the consequences affect our entire society. It is also their privilege disdainfully to flee the epidemic of mental illness which Dr. Gunnar Gundersen, President of the American Medical Association, describes as sweeping our country.

But, as "authentic" Allen Wheelis writes (17), "Knowledgeable moderns put their backs to the couch, and in so doing may fail occasionally to put their shoulders to the wheel." Might not those who "authentically" worship Freud's great courage be more useful if they emulated it as well?

The more widespread the classical psychoanalytic retreat from American psychi-

atric realities, the more the classical analysts leave the field of investigation of mental illness to chemists, geneticists and physiologists, whose tools are not designed for the best available understanding of human feelings. There is some danger that this classical psychoanalysts' retreat from reality will tend toward the abandonment of perhaps the greatest contribution by Freud to psychiatry: his recognition that mental illness arises from distorted interpersonal relationships, beginning with the family of origin.

This retreat of some classical psychoanalysts also abandons the most potent tool there is in the field, a tool scientifically defined by Freud's genius, and used, although in part incorrectly, by him and his followers: the emotional interaction between patient and doctor. This retreat also abandons one of the most effective curative techniques yet devised in psychiatry: free association into the past to discover the "reminiscences" still plaguing patients.

All of these potent contributions to human welfare would be jettisoned should all of classical psychoanalysis withdraw to sulk in elite secrecy. It could then perhaps join other self-proclaimed aristocracies, such as Virginia Woolf's "aristocracy of sensibility." But is not retreat into such "elitism" an abdication of the physician's responsibility to the patients needing his aid?

I believe the science of interpersonal relationships which Freud founded can, when properly modified, lay open the causes and nature of functional mental illness. I believe that only psychoanalysis has forged the scientific tools able to overcome the effects of man's inhumanity to man, perhaps the prime cause of human fear and mental illness.

Fortunately, despite the negative trends mentioned above, psychoanalysis is far from dead. The incisive work of Ackerman (18) and others on intra-family interactions, the distinguished studies which Spitz (19) has made on insufficiently fondled children, Ferenczi's (20) demonstration that the analyst's warmth is a necessary condition for cure, and Fromm-Reichmann's (21) brilliant sensitivity with schizophrenics all encourage the hope that precise knowledge of the effects of interpersonal

warmth at the breast, in the home and role-appropriate warmth in the office can help us fulfill our task of preventing and curing mental illness. But for us to do so, we must also return to scientific precision, even in the presence of human warmth.

SUMMARY

Scientific precision has far too often been consciously excluded from classical psychoanalysis, because Freud rejected it. In consequence, classical psychoanalysis has assumed many of the trappings of a religion, and lost many of the essential characteristics of a science. Two anti-scientific trends in the field, defensive secrecy and arrogant "elitism," seem to have occurred in part as a result of perpetuation of this lack of precision.

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CREDIBILITY OF SUICIDE NOTES

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In a study on affect manifest in suicide notes,¹ the reasons given in the note for the suicide act were assessed. The question may be raised whether credence can be given to the reason in the note since the individual may have been too disturbed to give a clear account of the circumstances leading to the suicide act. The purpose of this study, therefore, is to estimate whether the note accurately reflects the situation, by comparing the reason given in the note with that elicited from relatives, friends, or family doctors in the official investigation of the suicide by the Office of the Medical Examiner.⁴ Although the degree of objectivity may vary among these informants, presumably they represent more reliable sources of information than the suicidee himself.

In the study referred to above, notes were left by 165 suicides. Thirty percent of the notes gave no clue as to the reason for the suicide; in 32% of the cases the record showed no informant. The number of cases in which reasons for the suicide were available from both note and informant was 63. In 39 cases there was one informant; in 24 cases there were 2. The total number of informants was 87: 15 (mostly physicians) unrelated to the suicide, 53 close relatives (spouse, children, parents, sibling), 18 more distant relatives (nephew, niece, in-laws), and 1 with relationship not stated.

PROCEDURE AND RESULTS

Each of the 3 authors independently listed the reasons given in the 63 notes. Using the paired-agreement method, the amount of agreement among any 2 raters varied from 84% to 91%, the amount of

partial agreement from 37 to 87, and the amount of disagreement from 3% to 6%. To compare the reason given in the note with that given by the informant, it was necessary to have agreement on all notes. Therefore, the raters jointly reviewed any notes on which there was not full agreement. The reason agreed upon was then compared with that given by the informant, as stated in the records of the Office of the Medical Examiner.

In general, the reasons given by informants were more specific than those found in the notes. This is understandable since reasons given by informants are responses to direct questions by official investigators regarding circumstances leading to the suicide. The writing of the note, on the other hand, is an unstructured situation; no request was made of the individual to produce a note and there were no norms to guide him about its content. Some individuals gave detailed information, readily understandable by anyone reading the note, about their life situation and the factors that played a part in their decision to kill themselves. More often the information was somewhat obscure, but presumably clear to the individual to whom the note was addressed. For example, a note from a wife to her husband might not and would not need to contain a detailed account of the precipitating circumstances already known to him. In such cases, the note might just refer to the fact that she could not go on living under these conditions.

The comparisons of reason in the note and that given by the informant were classified into 3 categories: agreement, compatibility, and disagreement. The second category was necessary because some cases could not be classified in terms of agreement or disagreement, perhaps owing to the difference in the structuring of the situation for note-writer and informant. Examples of each of the 3 categories are shown below. For each category, the complete note is reproduced with the names omitted. The reason in the note as agreed

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given by the 3 raters and that given by the informant are also shown.

1. Agreement

I am losing the sight of both my eyes. Please take good care of the dogs. I have a heavy overcoat and trousers being cleaned at F— on Ogontz, above 67th.

Reason agreed upon by raters—Losing sight in both eyes.

Reason given by informant—Brother: Eyes bothering him and was in poor health.

2. Compatibility

Dear D— and D—:

I didn't know how you felt. I am sorry for anything I caused. I have always enjoyed card games with you and D—, when you and he liked to play. But I guess I expected too much. I have always been afraid to be alone in the Eve's, that's my only fear, loneliness. Each day I looked forward to you and D— coming home in the Eve. I am sorry believe me This way will be better for you & D—, I don't want to stand in your way.

The house will be yours and D—'s equally to live in as long as you 2 wish I'm no good by myself & don't want to stop you and D— from having fun. So this is the only thing I can think of.

I never realized before how much I was in the way. God bless and keep you both safe. All my love.

Mother

Reason agreed upon by raters—Desire not to stand in children's way, loneliness.

Reason given by informant—Children: Dependent since the death of her husband 2 years ago, and was under doctor's care.

3. Disagreement

My son-in-law is the cause of this.

T—

Reason agreed upon by raters—Apparent difficulty with son-in-law.

Reason given by informant—Daughter: Was depressed since death of wife a year ago.

Table 1 presents data on the amount of agreement, compatibility, and disagreement between note and informant. Since there were 24 cases with 2 informants, 2 comparisons are shown: one utilizing the first informant mentioned in the case record, the other utilizing the second. In each comparison, the 39 cases with just one informant were included.

Considerable agreement between the note and informant is evident: in each comparison there is 75% agreement and, in addition, 18% compatibility. Only 7% of the cases show disagreement.

It may be noted that the comparison between informants 1 and 2 (24 cases), also presented in Table 1, shows somewhat less agreement than between note and informant, but the difference is not statistically significant. The compatibility between reasons given by 2 informants may be due to variation in familiarity with the precipitating circumstances rather than to the difference in the structuring of the situation.

DISCUSSION AND CONCLUSION

The data indicate clearly that credence can be given to the reason found in the suicide note. This conclusion is warranted

TABLE 1
COMPARISON BETWEEN NOTE AND INFORMANT
AND BETWEEN 2 INFORMANTS

Category	Note and Informants		Informants 1 & 2 n=24 %
	Comparison 1* n=63 %	Comparison 2* n=63 %	
Agreement	75	75	63
Compatibility	18	18	21
Disagreement	7	7	16

* Comparison 1 utilized the first informant in the 24 cases with 2 informants, and comparison 2 utilized the second informant in these cases.

because in over 90% of the cases there was agreement or compatibility between the reason in the note and that obtained from the informant. In addition, the amount of agreement between note and informant is as high as that found between 2 informants. The agreement between note and informant cannot be attributed to the possibility that the informant had access to the note and merely repeated the reason in it. Assuming easiest access to the notes for close relatives, less for more distant relatives, and least for individuals unrelated to the suicide, comparison of note and informant showed no difference among the 3 groups in the amount of agreement, compatibility or

disagreement. Moreover, it is unreasonable to expect that the informant, presumed to be a normal individual, would give the same reason as that found in the note unless he thought it to be correct. Even if the informant did subscribe to the distorted perceptions of an individual who killed himself, the high amount of agreement between note and informant suggests that as much confidence can be placed in the note as in the informant.

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CLINICAL NOTES

A CLINICAL NOTE ON ISOCARBOXAZID

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Careful detailed observations were made on 14 private patients unresponsive to psychotherapy alone. Because of ideal conditions, frequent visits, and duration of continuous treatment, it is felt the results have a definite clinical value.

It was concluded that when administered to patients in certain categories, isocarboxazid² is an extremely safe and effective antidepressant. Because it is effective, however, there may be a tendency to use it in less typical cases with uniformly disappointing results.

The usual starting dose was 30 mg. daily, with later reduction to 20 or even 10 mg. daily.

Uniformly excellent results were observed in depressed but non-psychotic patients. The typical complaint was a feeling of depression accompanied by difficulty in making decisions and a sense of inferiority, inadequacy and inability to perform, and occasional ideas of suicide. Here isocarboxazid was very effective in relieving depression, but as one would expect, the underlying neurotic process remained unaltered.

One 56-year old, married, childless female had suffered for 3 years from an incapacitating depression that occurred every other day with such regularity that following a major operation it remitted for about 3 weeks and then resumed its course in exactly the same cycle.

Two courses of ineffective electroshock therapy were followed by two years of psychotherapy with some increased insight but no genuine clinical improvement. Given iproniazid, she experienced improvement for the first time. After 3 months she was switched to isocarboxazid, principally to lessen the possible risk of liver damage because of previous infectious hepatitis. Her improvement was so

marked that she felt her old self again. Almost a year later this improvement still obtains.

The comparative safety of isocarboxazid is illustrated by the case of a middle-aged man with a chronic compulsive neurosis. During analysis he developed a very severe depression which was unresponsive to analysis or psychotherapy.

The effects of iproniazid were so dramatic that he was soon able to return to his position as a business executive. After about 6 weeks, however, he developed hepatic complications, the drug was discontinued, and within 2 weeks a complete relapse had taken place. Isocarboxazid was instituted and in 2 weeks there was a complete remission. Four months later the patient is still taking the drug with no clinical or laboratory signs of any hepatic toxicity. Although this is only one case, it would seem to indicate that the drug must be extremely well tolerated by the liver.

Two cases of reactive depression were treated. One man had an alcoholic wife and the other's wife was chronically nagging, quarrelling and perpetually dissatisfied. Both patients were restored to normal mood and function within 10 days on a dosage of 10 mg. isocarboxazid t.i.d.

Two elderly females with addiction problems (tranquilizers and chloral hydrate) became depressed after withdrawal of medication and a week of withdrawal symptoms. Isocarboxazid was administered in the usual daily dosage. About a week later the depression was relieved and both were able to resume their former interests and activities.

Isocarboxazid seems to be most useful in patients who exhibit both motor and psychic retardation, but it is often effective in those who also have considerable tension and agitation.

The only consistently observed side effects were increased muscle tension, insomnia and transient attacks of dizziness, presumably due to vascular hypotension. The former were in most cases not severe

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enough to warrant therapy, but it needs say they were readily controlled with moderate doses of sedatives or tranquilizers. Dizziness was easily managed if patients were cautioned against sudden changes of position, and advised to sit down for a moment until the attack passed.

SUMMARY

Careful detailed observations were made on 14 private patients unresponsive to psychotherapy alone. It was concluded that when administered to patients in certain categories, isocarboxazid is an extremely safe and effective antidepressant.

THE ESTIMATION OF PHENOTHIAZINES USING CHEMICALLY IMPREGNATED PAPER STRIPS

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Methods for the rapid estimation of phenothiazines have been developed by Forrest(1, 2, 3, 4, 5). In our laboratory we have investigated the use of treated paper strips for these determinations. In a previous publication(6) we described a FeCl_3 -impregnated sulfonic acid resin-impregnated test strip. Lin(7) modified this to a FeCl_3 -impregnated Whatman 3MM paper. However, the yellow background of these papers does not make slightly positive results readily ascertainable. We have therefore developed other strips to remedy this difficulty.

MATERIALS

From rolls of Whatman 3MM, $\frac{1}{2}$ " to 1" wide, 7" strips were cut. The paper was treated with either .001M mercuric nitrate ($343 \text{ mg. Hg}(\text{NO}_3)_2 \cdot \text{H}_2\text{O}/1 \text{ H}_2\text{O}$) or .001M Uranyl nitrate ($502 \text{ mg. UO}_2(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}/1 \text{ H}_2\text{O}$) by immersion in the solution. The paper was placed on clean paper toweling and air-dried.

The ammonium persulfate treated strips were made by the addition of 90 g. of ammonium persulfate to one liter of .001M mercuric nitrate or one liter of the uranyl nitrate solution. The paper was then treated with these solutions. The strips may be used without drying. They are not stable for more than a few days when dry and should be discarded when they become discolored.

METHODS

Urine samples were tested by placing a

drop of urine on the paper. A drop of 3% H_2O_2 was applied to the same spot. After a few moments a drop of concentrated HCl was applied to the spot. When the ammonium persulfate paper was used the H_2O_2 was omitted. A negative result gave no color. A positive result gave a violet color. The colors were graded against the color chart present in Figure 1.

To test urine in suspected cases of overdose the procedure is changed slightly. The acid is placed adjacent to the sample spot after the peroxide addition. With a negative sample the paper remains white. A positive result with unmetabolized phenothiazines is red to red-brown. The amount of drug present was estimated by comparison to a color chart. The chart presented in Figure 1 was developed for the ammonium persulfate treated strips. When the H_2O_2 is used, slightly lighter color develops because of the spreading of the sample. The estimate was also carried out by running serial 1:1 dilutions with distilled H_2O until a negative result appeared. The "approximate minimum detectable quantities (AMD)" of several phenothiazines are presented in Table 1. The AMD multiplied by the dilution factor gives the estimated drug concentration in milligrams/milliliter:

$2^n \times \text{AMD} = \text{concentration}$, where $n = \#$ of the tube in 1:1 dilution series.

The usefulness of the strips in the testing of urine samples was examined. To check our results, the Forrest Universal(5) test and the Forrest test for piperazine-linked phenothiazines(4) were run on the same samples.

¹ From the clinical facilities and research laboratory of the Research Division, Central Islip State Hospital, Central Islip, N. Y.

PHENOTHIAZINE TEST

SAMPLE

URINE
grade

2

3

4

SPARINE
mg./ml.

1.56

.78

.19

TRILAFON
mg./ml.

.31

.15

.08

COMPAZINE
mg./ml.

.62

.31

.15

THORAZINE
mg./ml.

.39

.098

.049

VESPRIN
mg./ml.

2.5

1.25

.62

STELAZINE
mg./ml.

1.0

.5

.25

TABLE 1

THE AMD'S OF VARIOUS PHENOTHIAZINES IN MG./ML.

Test	Hg, H ₂ O ₂	Hg, NH ₄ S ₂ O ₈	U, H ₂ O ₂	U, NH ₄ S ₂ O ₈	Fe, SA 1
Thorazine	.024	.024	.024	.018	.031
Stelazine	.031	.062	.062	.062	.250
Vesprin	.019	.019	.019	.019	.031
Sparine	.048	.048	.048	.048	.015
Trilafon	.039	.019	.039	.039	.009
Compazine	.038	.038	.038	.038	.031

RESULTS

In a series of 400 urine samples from geriatric patients, approximately 15% false positives with a graded color of one or more were observed with the strips and both Forrest tests. The high rate of false positives is, in part, related to elevated levels of bile pigments as pointed out by Forrest. The false positives could not be correlated with the intake of other drugs.

The overall agreement of the Forrest tests with the strips was of the order of 86% agreement.

In a series of 19 chronic schizophrenic patients, who had not been on any phenothiazines in several months, the same series of tests were run. These results (Table 2)

TABLE 2

COMPARISON OF THE RESULTS WITH TEST STRIPS AND FORREST TESTS

Test	Negative	Grade +1	Grade +2
U/H ₂ O ₂	11	7	1
Hg/11 ₂ O ₂	11	7	1
U/NH ₄ S ₂ O ₈	11	7	1
Hg/NH ₄ S ₂ O ₈	11	7	1
Forrest Universal	6	11	2
Forrest piperazine-linked	7	10	2

were used as control values. This group of patients was retested after phenothiazine therapy was instituted. Five patients failed to show an increased color development with the strip tests and the Forrest tests during the first week of treatment. Three of them received 15 mg. /day of Stelazine. The other two received 50 mg. of an experimental phenothiazine, WY-2445.²

² This compound was supplied through the courtesy of Wyeth Laboratories, Philadelphia, Pa.

An additional 31 chronic schizophrenics were tested after drug therapy was started. Of this group, 9 failed to show positive results with the Forrest tests or the strips in their morning specimens. Specimens were taken 3 hours after the A.M. drug administration. The amount of Stelazine given was 5 mg. and the amount of WY-2445 was 50 mg. When 3-hour urine samples were tested, positive results were consistently observed.

CONCLUSION

The Forrest tests and the test strips give essentially the same results. These methods for testing for phenothiazines excreted in the urine require some caution on the part of the observer. A positive test may be indicative of phenothiazine intake, but also may be due to bile pigments or other excretion products. A negative test may be indicative of no drug intake or low intake. When interpreted with caution, these tests remain valid for estimating phenothiazine intake.

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IMIPRAMINE THERAPY OF DEPRESSIVE SYNDROMES

LEON REZNIKOFF, M.D.¹

In recent years numerous reports appeared in psychiatric literature abroad and in this country dealing with the use of new pharmacological agents in the treatment of depressive states; several monoamine oxidase (MAO) inhibitors have been found helpful in alleviating depressions.

However, these investigators in discussing MAO inhibitors emphasize the need for frequent and periodic laboratory studies of liver function; these tests while very useful in determining the slightest damage to the liver, frequently alarm the already apprehensive and hypochondriacal patients to such degree that the effectiveness of the drug may be nullified by emphasizing the possibility of body damage.

The therapeutic usefulness of the MAO inhibitor drugs in depressions had been established beyond any doubt but the drawback of possible liver damage makes it difficult for the clinician to prescribe these drugs for some ambulatory patients.

Therefore, a drug which is not a MAO inhibitor, and is not likely to produce serious side effects should be most useful in the treatment of ambulatory depressive patients.

During the past year I have been using imipramine hydrochloride (Tofranil)² in the treatment of depressions. It is not a MAO inhibitor and according to our present knowledge is not apt to produce any liver damage. This brief report deals with the treatment of 40 depressed patients divided in two groups: the first group consisted of 25 ambulatory patients treated in a private office; the second consisted of 15 patients committed to a public mental hospital. They belonged to the following diagnostic classifications:

Ambulatory group: endogenous depression, 13; reactive depression, 6; agitated depression, 6.

Hospitalized group: manic-depressive re-

action, depressed, 8; involutional psychotic reaction, 2; schizo-affective reaction, 5.

The youngest patient was 24 years old, the oldest 75. There were 15 male, and 25 female patients.

Extensive laboratory studies have been carried out for the hospitalized group; transaminase tests for liver function and blood counts were performed at weekly intervals; patients have been closely observed for any side effects. Blood pressure and weight recorded weekly. The most frequent complaints consisted of, in the following order of frequency: dryness in the mouth, profuse perspiration, constipation, dizziness, blurred vision and hot flushes. One patient during the course of treatment with imipramine developed a mild hypomanic state, which subsided in about 2 weeks. Since imipramine produces atropin like effects it is contra-indicated in glaucoma. When there was gain in weight it was attributed to the alleviation of depression and return of appetite, rather than any special side effect of imipramine, since patients who failed to improve clinically, also failed to gain weight although they had been on imipramine for over 3 months.

The treatment was started with 25 mg. 3 or 4 times a day and increased to 150 mg. per day; only a few patients required larger doses; maximum dose used in 2 cases amounted to 225 mg. per day in divided doses.

Most of the ambulatory patients had anxiety elements in their clinical picture of depression; addition of a tranquilizing drug to the imipramine regime during the day, and barbiturate at night to facilitate sleep had been found most effective.

All patients were interviewed at least twice a week during the first 2 or 3 weeks on therapy; after that at weekly intervals; psychotherapy of supportive type was employed with all hospitalized patients; the ambulatory patients received directive psychotherapy. Thirty-two (80%) patients in both groups either achieved complete remission, or improved to such extent that

¹ Clinical Director, Hudson County Hospital for Mental Diseases, Secaucus, N. J.

² Imipramine hydrochloride generously supplied for this study by Geigy Pharmaceuticals under name of Tofranil.

they had been able to return to their former occupation. Eight patients (20%) either showed slight improvement or transient changes, and therefore were classified as unimproved. Because of tendency of depressive patients to relapse, treatment with imipramine was carried on for at least 3 months, although the dose was reduced 2 weeks after patients achieved what seemed to be maximum improvement; however with some patients improvement was so marked, that imipramine could be discontinued after 2 months.

SUMMARY AND CONCLUSIONS

Forty patients suffering from various depressive syndromes had been treated with imipramine hydrochloride for a period of 3 to 12 months.

Remissions and marked improvement had been obtained in 80% of cases.

The effect of the drug is apparent in 2 to 4 weeks after beginning of therapy, and in some cases it is noticeable even after a few days.

Imipramine is effective regardless of long duration of the depression. The relief of depressive feelings is not dramatic and sudden, as with ECT, but rather gradual.

In refractory patients with a tendency to relapse, the drug had been administered in reduced dosage for 12 months, and apparently can be continued indefinitely; this is a distinct advantage over ECT, since ambulatory patients inevitably after a few courses of ECT resist further attempts at maintenance, or preventive ECT.

In none of the 40 patients did imipramine have to be discontinued because of side effects, although several patients complained of dryness of the mouth, profuse perspiration, constipation, dizziness, blurred vision and hot flushes.

TREATMENT OF CHRONIC SCHIZOPHRENICS WITH LIOETHYRONINE (L-TRIIODOTHYRONINE)¹

E. J. TOLAN, M.D., B. KOVITZ, M.D., AND LOWELL DILLON, M.D.²

Liothyronine is a potent hormone with qualitative metabolic and physiological effects of desiccated thyroid and L-Thyroxin, differing only in its chemical structure, previously used in the treatment of low basal metabolism without myxedema; in obesity, cretinism, sterility, alcoholism, and mental disorders.

Some authors have reported relief of mild to moderate ambulatory depressive states but could not explain why some patients responded while others did not.

Twenty-four hospitalized chronic schizophrenics were selected for treatment. Ages varied between 24 and 48 years (average 36.7 years). Duration of illness 1 to 31 years (average 8.5 years).

Despite different admission diagnoses, symptoms of: withdrawal, unsociability,

seclusiveness, inactivity, depression, and uncooperativeness, varied. Some were unkempt, negativistic, taciturn, at times mute, with minimal signs of overt anxiety. All had previously received tranquilizing medications without major or lasting improvement; 21 patients had previously received electro-convulsive therapy and 9 insulin therapy, with only temporary benefit.

C.B.C. and urinalysis were performed on all cases, cardio-vascular disease was ruled out. P.B.I., B.M.R., and serum cholesterol were not determined; our chief interest was the mental status of the patients. Vital signs and weights were checked at regular intervals. All were free of physical disease except one male and one female patient who had shown thyroid insufficiency on previous examination. One had been treated with thyroid, the other received thyroid 1 gr. daily concurrently with the liothyronine.

Each patient served as his own control, receiving divided daily oral dosage, over a 13-week period, the smallest dose 10 mcg.,

¹ "Cytomel" trademark for liothyronine (triiodo-thyronine), furnished by the courtesy of S.K.F. Lab.

² Respectively: Resident Psychiatrist, Clinical Director, and Superintendent, Columbus State Hospital, Columbus, Ohio.

the largest 100 mcg., with a total of 620 mcg.

Physical Effects: Vital signs stayed within normal limits, no signs of cardiac failure were noted. There were no reports of dizziness, headaches, excessive sweating, pruritus, menstrual disturbance, or excessive urination. Some patients showed an increased appetite; 8 gained weight, 12 lost and 4 stayed the same.

Six showed minimal side effects as: restlessness, tension, anxiety, fear, and sleeplessness. Five females showed extrapyramidal syndrome signs, with rigidity, shaking of extremities, staring looks, mask-like facies and dragging of feet. They also showed marked side effects and mental confusion and medication was discontinued. Thirteen patients were free of any side effects.

Psychological Results: Of the 24 patients; 8 showed improvement (cyclic), 12 no change, and 4 were worse. This cyclic improvement had never been previously observed. The degree of improvement can only be described as minimal. During the periods of clinical improvement, the patients were more alert, active, social, and talkative. They paid more attention to themselves and their surroundings. Some became more industrious. Depression and withdrawal were less noticeable. In general, the improvement was not only periodic but was noted chiefly during the peak dosage, and diminished or disappeared as the medication was reduced.

In the 4 patients who appeared worse, restlessness, sleeplessness, tension, lack of interest in themselves or their surroundings, and depression were noted. Delusions and hallucinations appeared intensified and were more readily expressed. Two patients were also hostile, irritable, fearful, and uncooperative; 4 patients, including 2 of the improved group displayed overt sexual interest toward other patients, nursing staff, physicians, and relatives.

Changes for the worse occurred at any time after the first two weeks of treatment.

SUMMARY AND CONCLUSION

Half of the group of 24 showed temporary changes. These changes were maximal at the peak doses, either in the direction of decreased depression and withdrawal (8 cases) or increased restlessness and tension (4 cases). These changes were not lasting, and as the medication was decreased, the group as a whole returned to its original level. The temporary periods of improvement occurred in a peculiar cyclic pattern, lasting from a few days to a few weeks at a time.

In higher doses the drug was accompanied by changes in the mood and activity of chronic schizophrenic patients, but did not bring about a lasting or dependable improvement in psychiatric status or hospital adjustment. The use of liothyronine in psychiatric disorders must still be considered in experimental stage.



DR. UGO CERLETTI

HISTORICAL NOTES

THE STORY OF THE FIRST ELECTROSHOCK TREATMENT

DAVID J. IMPASTATO, M.D.¹

I recently asked Professor Ugo Cerletti of Rome, Italy, to tell me the story of the first electroshock treatment.

Prior to assuming the professorship in psychiatry in Rome in 1935, Cerletti had for a number of years been investigating histopathologic cerebral changes consequent to convulsions in animals. To avoid artifacts, from toxic substances or from the passage of electricity through the brain, he did not use drugs to produce the convulsions and placed the electrodes one in the rectum and the other in the mouth (Viale method). This method did not entirely prevent electricity reaching the brain as was later shown by Bini. With the Viale method, not a few of the dogs died from cardiac arrest as the current traversed the heart. To avoid this complication, convulsions were produced with the least possible quantity of electricity given for a very short time (60-70 volts for 0.1 second).

Soon after Meduna published his experiences with Cardiazol Convulsive Therapy in Psychiatric Conditions, Cerletti introduced this therapy in Rome. It then occurred to almost all those in his group who were daily inducing electric convulsions in dogs, to apply this method therapeutically to man. Most of the researchers, however, were timid and feared causing death, irreversible brain changes and epileptic states. Cerletti was the least fearful, but as yet he did not dare to initiate the procedure. Later seeing a parallel between the cardiazol convulsion and the convulsions caused by transcranial application of electricity; using a bi-temporal application of the electrodes, he experimented on many pigs which were placed at his disposal at the slaughter house in Rome. With these animals he changed the scope of his experiment and instead of using the least amount of current to produce the convulsion, he set out to

find the quantity of current needed and for how long a period of time it should be applied to kill an animal. After noticing that in order to do this a tremendous amount of current had to be used for a prolonged time, and that there was a vast difference between a convulsant and a killing dose of electricity, he became certain that the method would be safe in man and decided to go on with it. This was his decision and no one else had anything to do with this aspect of the procedure. Cerletti asserts that EST was not an invention but it was merely an audacious act. He gives to Meduna the honor of having invented the convulsive therapies.

Bini together with the electrical engineer of the clinic constructed the machine which had two circuits:

A direct circuit for the measurements of the resistance of the patient's head, measured in ohms. The other, an alternating current to elicit the convulsion. This circuit included a timer which measured time in 1/10 of a second up to a minute; a potentiometer which allowed the voltage to vary from 50 to 150; and an ammeter to indicate the milliamperage which flowed between the electrodes. The circuits were contained in a metallic case which made the apparatus quite heavy. Dr. Renato Almansi who worked with Dr. Cerletti, brought one of these machines to America in 1939 which he and I used in our experiments on dogs, and in our first patient.

Now came the search for Rome's first patient. For obvious reasons this was not a simple matter. Then, luckily, a patient from North Italy was admitted to the clinic who was a catatonic schizophrenic and who spoke an incomprehensible gibberish. He was unable to give his name or to state anything about himself. No one could identify him. Dr. Cerletti decided he should be the historic patient. Following

¹ 40 Fifth Ave., New York 11, N. Y.

adequate preparations the first treatment was given in 1938. Present were Cerletti, Bassi, Langa, Accornero, Kalinowsky and Hirschler. The patient was brought in, the machine was set at 1/10 of a second and 70 volts and the shock given. Naturally, the low dosage resulted in a petit mal reaction. After the electric spasm, which lasted a fraction of a second, the patient burst out into song. The Professor suggested that another treatment with a higher voltage be given. The staff objected. They stated that if another treatment were given the patient would probably die and wanted

further treatment postponed until the morrow. The Professor knew what that meant. He decided to go ahead right then and there, but before he could say so the patient suddenly sat up and pontifically proclaimed, no longer in a jargon, but in clear Italian: "Non una seconda! Mortifera!" (Not again, it will kill me). This made the Professor think and swallow, but his courage was not lost. He gave the order to proceed at a higher voltage and a longer time: and the first electroconvulsion in man ensued. Thus was born EST out of one man and over the objection of his assistants.

COMMENTS

PROFESSIONAL ETHICS FOR THE PSYCHIATRIST IN THE PRESENT DAY¹

Advances in science and methodology through the centuries have radically and continuously changed the practice of medicine. The fundamental philosophy of medical practice has not changed to any significant extent, however. The Code of Medical Ethics of the American Medical Association, first published in 1848 and revised six times subsequently, including the most recent revision in 1955, still embodies in principle the standards of ethical conduct for physicians which Hippocrates included in his renowned oath. Now as in the days of Hippocrates and his followers, the chief concern of the physician in the practice of his profession is the benefit of his patients. Certainly he is expected to "abstain from every voluntary act of mischief and corruption; and further, from the seduction of females or males, . . ."² To quote from the Hippocratic Oath, the confidential relationship between the physician and his patients remains a sacred trust, and the right of privileged communication has been upheld by law.

Psychiatry is a special branch of medicine. Physicians for many years have assumed direct responsibility for the care and treatment of the mentally ill. The first national medical association in North America, was organized by thirteen physicians who were in charge of institutions providing residential care for mentally ill patients. This group of physicians, in their meeting in Philadelphia, Pennsylvania, on October 16, 1844, established the Association of Medical Superintendents of American Institutions for the Insane. In 1892 the name of this organization was changed to the American Medico-Psychological Association.

¹ At the request of the Journal, Dr. Tarumianz, who is chairman of the Committee on Ethics, kindly prepared this statement which we are happy to print as a guest editorial comment. Ed.

² Oath of Hippocrates, quoted from M. A. Tarumianz, "History of Medical Ethics, *Delaware State Medical Journal*, Vol. 21, No. 10, October 1949, p. 225.

In 1921 the Association was renamed The American Psychiatric Association, and in 1927 it was incorporated under the laws of the District of Columbia.³

On May 5, 1951, the Council of the American Psychiatric Association approved *A Manual of Organization and Policy (Presenting Our Purposes and How We Work Toward Them)*. This manual was approved by the membership of the Association on May 8, 1951, at the annual meeting in Cincinnati, Ohio. Section VI of the *Manual*, which concerns professional ethics, notes that "The APA recognizes and adopts the Code of Ethics"⁴ of The Canadian and The American Medical Associations.

A code of ethics for psychiatrists was drafted in 1953 by members of the American Psychiatric Association after several years of study had been given the matter. This proposed code presented certain special problems of concern to psychiatrists which had not been included in the American Medical Association Principles of Medical Ethics. This proposed code was considered by several district psychiatric societies and adopted by one. The Council of APA received the proposed code of ethics in 1955 but decided to study the matter further inasmuch as there was no consensus among the membership that psychiatrists needed a code of ethics separate from that to which other physicians subscribe. There has been no further action to date regarding a special code of ethics for psychiatrists.

Some years ago the American Psychiatric Association assigned to a standing committee, the Committee on Ethics, the responsibility of investigating complaints and accusations presented against psychiatrists who are members of the Association. The Council of APA in 1955 adopted a Code of Procedure to follow in regard to matters of ethics recommended by the Committee

³ *A Manual of Organization and Policy, American Psychiatric Association*, p. 1.

⁴ *Ibid.*, p. 5.

on Ethics. According to the procedure adopted the Committee on Ethics makes the investigation of charges. A hearing on hearings may be arranged at which the accused psychiatrist and/or his counsel may appear, after receiving the report of the findings and recommendations to the Committee, the Council of the APA takes final action.

A procedure for disciplinary action against members of the Association who are proven guilty of violations of medical ethics was adopted by the Council in 1957. In 1958 the membership voted amendments to the Constitution and By-Laws of the APA, giving to the Council authority by which "a member may be admonished, reprimanded, expelled or suspended from the privileges of membership if such action is determined and voted by two-thirds of the Council; provided Council, by a two-thirds vote, shall determine that such a member has been engaged in unethical or unprofessional conduct, or has wilfully refused to comply with resolutions or requests of the Council, or brings discredit or dishonor on the Association or on the practice of psychiatry, or if he has been convicted of a crime involving moral turpitude."⁶

In the discussion which preceded the adoption of procedure for disciplinary action against members, there was some question as to the necessity for such provisions. Although psychiatrists have not lacked definitely stated principles of professional ethics to guide them, it appears that the conduct of some members of the profession has led to questions and accusations suggesting possible violation of ethics. During each year in which the writer has served with the Committee on Ethics, both as a member and more recently as chairman, complaints and accusations have been presented against members of the Association. Some of the complainants have been former patients of the accused physicians, but some have been other physicians.

In several instances physicians have been involved in publicity suggestive of self-advertising. To promote the sale of a physician's book, publishing companies, sometimes acting without the author's approval

of knowledge, may circulate brochures which make unwarranted claims or are written in a style not in keeping with the dignity of the physician-author. An author can not abrogate all responsibility for the type of publicity his production receives. He must reserve the right to approve the publicity material to be used in presenting his writings to the public.

At times physicians have been quoted in advertisements of pharmaceutical products. A physician engaged in experimental study of various medications would be expected to report in scientific journals or before professional societies the results of his research. He would not endorse particular pharmaceutical products.

The preparation of a psychiatrist is costly in both time and money. Higher fees may be justifiable for the services of this type of specialist, but unreasonably large fees or unwarranted claims for cures can not be supported. Several complaints of malpractice have been argued in courts of law in various states, and the Committee on Ethics has received accusations against some physicians who, in return for exorbitant fees, guaranteed to cure a patient of a mental condition for which there is as yet no known cure. Charges have been brought for the alleged promise of a physician to treat one mentally ill patient exclusively and receive a large fee on a regular basis. Professional ethics demands of the physician a realistic and *humble* appraisal of his abilities and limitations in trying to meet the needs of other individuals. Also, the dedication of the physician must be to render service to ill people rather than to make money.

The apparent impetus to practice psychiatry for monetary gain *per se* has led to accusations against physicians of adopting practices suggestive of defrauding rather than serving the public. Care should be exercised in the involvement of non-medical personnel in the treatment process. The position of the American Psychiatric Association is quite clear that "(1) 'Psychotherapy is a form of medical treatment and does not form the basis of a separate profession . . . ' (2) It is imperative that all psychologists and other non-medical personnel dealing with persons suffering from mental and nervous disease and disorder

⁶ APA By-Laws, Art. III, Sect. 3.

should do so only under supervision by psychiatrists and in a medical setting offering adequate safeguards to the patients."⁶

The charge of the violation of privileged communication has been made against some psychiatrists. Even in situations in which the release of confidential information is to advance the treatment of a patient, as in the case of requests for past histories or diagnostic summaries to be sent to hospitals or other physicians, permission should be obtained from the patients, if they are competent, or from responsible relatives or guardians before such information is released. As the *Code of Ethics* of the American Medical Association indicates, "Sometimes, however, a physician must determine whether his duty to society requires him to employ knowledge, obtained through confidences entrusted to him as a physician . . . Before he determines his course, the physician should know the civil law of his commonwealth concerning privileged communication."⁷

The most serious accusation, and the one presented most frequently by patients or their relatives, is that of alleged intimacies between physicians and patients. Physi-

cians, particularly psychiatrists, are in a vulnerable position. Much of their practice involves the treatment of emotionally disturbed or mentally ill persons who may mis-understand or misinterpret the physician's relationship. The physician must be constantly on guard against any emotional involvement of a patient with him. He should exercise care concerning the circumstances under which he treats a patient. His treatment methods should be those approved by the medical profession and especially those which would be accepted by society in general.

Various theories of treatment may be suggested in good faith, but the psychiatrist should be wary of any which would be questioned by his professional colleagues especially.

Theories and practices in medicine, and in that phase of medical specialty called psychiatry, will continue to change, no doubt. The high principles of medical ethics will remain constant. The physician's chief reason for the acquisition of training and skill as well as for the practice of his profession is to do all in his power to relieve the ills of humanity. The dedication of physicians to high ethical standards of medical practice is essential if the profession is to advance.

M. A. Tarumianz, M.D.,
Delaware State Psychiatrist.

⁶ Principles of Medical Ethics of the American Medical Association, Chapter II, Sec. 1, Chicago, Illinois, p. 14.

⁷ APA Manual, *op. cit.*, pp. 5f.

RULES

The young man knows the rules, but the old man knows the exceptions.

—OLIVER WENDELL HOLMES

CORRESPONDENCE

PSYCHIC DETERMINISM : AN OUTMODED CONCEPT ?

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : In the November issue of the *Journal*, Ronald W. Angel criticizes the notion of psychic determinism on the basis of recent developments in physics. He notes that psychic determinism has often been considered fundamental to psychoanalysis, that Freud frequently treated it as an axiom on which investigation was based, and that some contemporary analysts, even after losing faith in it as an axiom, are reluctant to abandon it as a healthy working hypothesis.

On the other hand, Angel calls attention to the discovery by physicist Werner Heisenberg that the smallest particles behave in a random fashion. The behavior of these particles can be predicted only when they are considered in the aggregate, according to statistical calculations of probability, the prediction taking the form of an anticipation with a high probability rather than an assurance.

In attempting to understand the hold which the notion of psychic determinism has on certain thinkers, Angel cites with approval Bertrand Russell's contention that determinism has become ingrained over the centuries, while the newer physics is difficult to understand. Still following Russell, he translates the concept of determinism from a statement about causality into a statement about a functional relationship which says, in effect, that the state of a system at a given time is a function of its states at previous times. The determinists, according to Angel, believe that such a function is "limited in complexity ; capable of being apprehended and written down." Angel believes that with this qualification Russell's formula expresses the determinism position, and manages to do so without any reference to some eternal force of causality. Instead of an axiom of investigation, it is merely a hoped-for regularity which may or may not be found as science learns more about the world.

Angel then suggests that in fact we now

have some reason to think that the hope is unfounded ; the regularity is not there ; determinism does not hold ; there is randomness in the workings of the mind.

He notes that even Freud entertained the idea that an organic rather than a psychic state may account for a psychic effect, and he refers to a recent suggestion that at a decisive point in neuronal pathways, psychological results may be determined by structures small enough to "come under" the Heisenberg Principle, in other words, psychological states may represent random neurological activity. He suggests that eventually a "statistical point of view" may replace determinism in the realm of psychology.

Angel has done a service in confronting psychology with the new physics ; habitual modes of reasoning should be disturbed and challenged by the recent developments in the most advanced science. The purpose of this paper, however, is to underline the tentativeness with which Angel's conclusions are presented, and to support the thesis that the lesson for psychology to learn from modern physics is not yet available. Angel, after all, is dealing with several of the most intractable headaches of philosophy, and one cannot be too cautious in evaluating the claims of a new remedy for a malady of hundreds of years duration. (Among the symptoms are problems of causality and chance, the mind-body problem, the problem of substance or objects, and the problem of the *a priori*.)

The main points of Angel's presentation, as summarized by him, are : 1. That physics no longer accepts causality as a basic postulate ; 2. That psychoanalysts have been reluctant to abandon it because the idea has become habitual to them, while the alternative is difficult to understand ; 3. That determinism can be expressed as a functional relationship, and 4. That this functional relation is open to question, since it cannot be established *a priori*. These points will now be briefly debated.

HAS PHYSICS DISPROVEN CAUSALITY ?

Physics *per se* makes no statements about causality; modern philosophy of science makes many. Just as there are varying schools of psychology, so there are varying schools of philosophy. One must be careful to guard against assuming that recent theories are necessarily more adequate than older ones, just as one would hesitate to pronounce existentialism an advance beyond psychoanalysis, or neo-Zen an improvement on existentialism on chronological grounds alone. More important still, history shows that philosophy of science, far from directing scientific thought, is a follower and explainer, and tries to make general sense out of specific scientific advances. It is never as up-to-date as the contemporary science it studies, so that even the legitimate enthusiasm for the latest theory should be tempered by the fact that it is young and immature.

Statements in modern physics tend to take the form of symbolic relations between symbolic notations. It has been the difficult task of the philosophy of science to elaborate the significance of these symbols. No one will say that this task has been completed. Bertrand Russell, in fact, is among those who have been actively wrestling with the translation of scientific statements into the terms which we ordinarily use to describe our world. Among philosophers, even among those of kindred outlook, there is probably more disagreement than agreement on this subject. We must note, then, that the Heisenberg Indeterminacy Principle applies to "particles" the nature of which cannot as yet be confidently stated apart from the symbolic notation in which the principle is formulated; we have not even the right to think of "them" as individual "things." If we say that causality "does not hold" in physics, we must add that it does not hold when applied to items which themselves we cannot as yet conceptualize. If we precipitously pronounce that causality is *passé*, we may be making an altogether unjustified translation of our abstract symbols on the basis of a mere analogy between these "unthinkable" particles and the things that we normally talk about.

WHY ARE SOME THINKERS SO REACTIONARY ABOUT DETERMINISM ?

Psychiatrists have come to think that firmly held views, no matter how apparently bizarre and unreasonable, turn out on examination to have some kind of almost reasonable foundation. Psychiatrists, therefore, have less excuse than philosophers when they dismiss popular and tenacious doctrines as mere habit or ignorance. This applies to the notion of determinism. Anyone who feels that determinism is a naive belief should refer to the little-known work of Emile Meyerson who traces the impact of this belief on the progress of science up to his day. He offers a very persuasive argument that science (and explanation in general) is an attempt to find that what looks like a change is in fact the expression of something that does not change; that we seek an identity underlying an apparent diversity, and that the idea of causality is a part of the very process of explanation.

Be that as it may, it behoves the critic of this ancient notion to show in detail that he can do without it, and to date this has not been done. I am tempted to adduce Angel's apparent belief that a random distribution of neuronal elements might *cause* a psychological effect. But far more important are the difficulties encountered by indeterminist philosophers of science in coping with problems which are in fact the gaps left in their systems by the rejection of causality.

DETERMINISM WITHOUT CAUSALITY ?

Russell's translation of determinism from causal terms into terms of functional relations is incomplete, and, by virtue of being incomplete, argues against the notion of causality by begging the question, and stores up trouble for him in another area. Someone who believes in causality believes that the description of a system at a given time is a function of certain data at other times, and this much Russell has accounted for in his formula. But a believer in causality also believes that the relationship holds even if the data are not observed, and the events they describe do not happen. In other words, causality implies that if the data are as described in the antecedent part of the formula, *then* the final description also

applies, even when the data are not so described; in that case he says that a given state *would have* been observed, if the requisite data *had been* noted. This last phrase is known as a "counter-fact conditional" statement, meaning that it says something about what would have resulted if something which did not happen had happened. This part of the meaning of causality is not comprehended within Russell's formula, and it is omitted precisely because such a statement involves the notion of causality which it is Russell's purpose to dismiss. Now the impressive fact, the significance of which cannot be exaggerated, is that modern philosophy of science finds as great a need for counter-fact conditional statements as did ancient philosophy. To convince oneself of this, one need only note the profusion of attempted formulations of the counter-fact conditional. And it is really no surprise at all because a moment's reflection will reveal that if one cannot make counter-fact conditional statements, one cannot predict events in the future. Russell's formula is a case in point. His notation limits him to statements about relations between things that have actually happened. There is no room in it for invisible or latent tendencies which have never manifested themselves. But it is belief in these dormant "tendencies" (usually called laws of nature or causal chains) which leads us to predictions, because at the time when we want to make a prediction, the "tendency" we are counting on has not yet yielded up its manifestation. When the future arrives, we can describe the relation between conditions at two times according to Russell's formula, but while the future still lies before us, the hints about what it will be like can in no way be accommodated in Russell's formula. In short, there is no room in Russell's functional relationships for "tendencies" or "dispositions (to react in certain ways)," and without these we can make no statements about what does not yet exist. But science is nothing if not predictive.

Although visibly disturbed by it, modern philosophy of science has not resolved this dilemma, and its failure to do so leaves it open to the charge that the counter-fact conditional statement represents in modern philosophy of science what causality repre-

sents in the older systems, and the generally recognized necessity for such statements is an indication that modern science like ancient science employs the notion of causality.

IS THE QUESTION OF DETERMINISM AN EMPIRICAL ONE?

Finally, Angel's statement that the question of determinism "cannot be answered *a priori*" hinges on his accepting Russell's functional translation of the notion of determinism. We have seen that Russell was attempting to confine his translation to descriptions of what has actually happened (omitting what might have happened). Because he limited himself in this way, he made determinism an empirical hypothesis: he says to look and see if a relation can always be established between all the states of a system at all moments. Angel is correct in saying that we cannot answer this question *a priori*. But if we are to have the power to say what would have happened and what will probably happen, we may need to invoke a principle of causality, and this principle may well *have* to be *a priori*.

Behind the great sophistication of modern probability theory lurks one uneasy commonplace, namely that no mere empirical description of what is or has been, offers by itself a valid reason for expecting something in the future, no matter how tentatively and probabilistically we hedge our expectation. Hume and Kant may be of some use to us yet.

Philosophy is like a closed surgical glove partly filled with air. If one attempts to collapse one finger it will tear a hole elsewhere in the glove. The fingers represent concepts, for example causality. The history of philosophy is replete with schools that have nicely done away with problems or concepts that have concerned other schools, only to find that they are struggling just as hard with problems that are merely the manifestations of the same pressure that forced the others to their conclusions. Perhaps this is the most important lesson to be learned from the history of philosophy.

CONCLUSIONS

1. It is not yet clear what conclusions we may draw from the Indeterminacy Principle

of physics in regard to causality or determinism.

2. We must explain why many thinkers hang on to the concepts of causality and determinism by factors of sufficient weight to account for the tenacity with which they hold on.

3. Determinism, as it is commonly thought of, has not as yet been expressed in non-causal terms, and causality or its proxies still appear to be essential concepts in scientific thought.

4. Attempts to make the question of determinism an empirical one have not been successful.

Lawrence Friedman, Lt. (MC) USNR,
United States Naval Hospital,
Navy No. 3923,
F.P.O. San Francisco, Calif.

REPLY TO FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY :

SIR : It was a pleasure to learn that my paper has been studied so carefully and answered so intelligently by Dr. Friedman. I would agree with him that one should "underline the tentativeness" of my conclusions. The purpose of my article was certainly not to provide a definitive statement on the current status of causality or to insist that psychiatry must keep in step with physics. Another point on which I would agree with Dr. Friedman is the danger of using—or abusing—the concepts of modern physics in fields where they do not apply. In this connection, I feel that one should be very cautious in applying Heisenberg's principle as Eccles has done. Although I referred to Eccles' use of the Indeterminacy Principle in neurophysiology, I cannot accept responsibility for the validity or invalidity of Eccles' argument. My object in paraphrasing Eccles was merely to show one possible mechanism whereby neuronal activity may be randomized, at least partially.

After my article was submitted for publication, Russell's new book, *My Philosophical Development*, was released. Dr. Friedman will be pleased to learn that Russell is now less definite in his rejection of causality. On p. 17 Russell writes, "Cause, which was the philosophical form of what

physicists called force, has also become decrepit. I will not admit that it is dead, but it has nothing like the vigour of its earlier days." Moreover, in chapter XVI, Russell invokes the notion of "causal lines." So it looks as if the "old headaches" may be with us for some time. If my article had been written a few months later, some of the remarks about causality would have been even more tentative.

Entirely aside from the question of causality and determinism, I think that it is important for psychologists and psychiatrists to be aware of the growing interest in information theory and the importance of "random" factors in biological systems. The current literature on mathematical biophysics contains numerous references to "Markov chains" and "Markovian machines," in which behavior is determined by a matrix of transition probabilities. Here is an example which should be of great interest to psychologists : At the University of Illinois, high-speed digital computers are now being used to compose music, imitating, to some extent, the thought-processes of human composers. When the machine was set to composing melodies, it was programmed so as to generate random integers. Different degrees of randomness could be introduced in order to achieve a "compromise between chaos and monotony." The point that I wish to make is this : that even the computing machines are now being programmed so as to include random factors in their behavior, especially when they are supposed to be imitating "human" activities.

In my article I suggested that normal human behavior may involve some sort of balance or compromise between order and disorder, between randomness and rigid organization. I feel that this concept will assume more and more importance in future analyses of human behavior. This concept does not need to involve those "intractable headaches of philosophy" at all. We are faced with a very practical and important question : to what extent does the "programming" of the human brain include random factors ? Without allowing for randomization, we cannot understand the operation of ILLIAC, much less the human mind.

In summary, I feel that my statements

about causality should be modified in the light of Russell's recent statements on the subject. Nevertheless, I feel that psychiatrists should pay very serious attention to recent developments in information theory, systems analysis, and programming of computers, in which random factors are recognized as very important. We may discover

that normal human behavior is a compromise between order and disorder, susceptible to abnormal deviations in one direction or the other.

Ronald W. Angel, M.D.
VA Hospital
Hines, Ill

WISDOM

Here is the test of wisdom
Wisdom is not finally tested in schools.
Wisdom cannot be pass'd from one having it to another not having it,
Wisdom is of the soul, is not susceptible of proof, is its own proof.

—WALT WHITMAN

OPINION

Nothing is more curious than the self-satisfied dogmatism with which mankind at each period of its history cherishes the delusion of the finality of its existing modes of knowledge. Sceptics and believers are all alike. At this moment scientists and sceptics are the leading dogmatists. Advance in detail is admitted: fundamental novelty is barred. This dogmatic common sense is the death of philosophical adventure. The Universe is vast.

—ALFRED NORTH WHITEHEAD

NEWS AND NOTES

HARVARD RESEARCH TRAINING PROGRAM.—

This program is designed for selected psychiatric residents after their third year of training, or Ph.D.'s interested in mental health research careers. The candidate will be attached to one of 8 laboratories (clinical psychiatry, social science, psychology, psychophysiology, psychopharmacology, neurochemistry, and neurophysiology), will participate in interdisciplinary seminars, and will receive other special instruction. The training period may be for one or more years, to fit a man for a career in research or academic life. The stipend: \$8,000 for the first and \$7,000 for the second year of training, beginning in July of 1960. For information address the Research Department of the Massachusetts Mental Health Center, 74 Fenwood Road, Boston.

DR. BARNES WOODHALL APPOINTED DEAN DUKE MEDICAL SCHOOL.—Neurosurgeon Barnes Woodhall assumes the deanship of Duke University Medical School July 1, 1960, succeeding Dr. Wilburt C. Davison, Professor of Pediatrics in the Medical School. Dr. Woodhall, many years a member of the faculty of Duke Medical School, is V.A. consultant in neurology, treasurer to the Second International Congress of Neurological Surgery 1961, and member of the executive council of the World Federation of Neurosurgical Societies.

DR. BERNARD WORTIS DEAN N. Y. U. SCHOOL OF MEDICINE.—Succeeding Dr. Donal Sheehan, professor of anatomy, New York University has announced the appointment of Dr. S. Bernard Wortis as dean of the School of Medicine and Post-Graduate Medical School and deputy director of the N. Y. U. Medical Center. Dr. Wortis will also continue as professor of psychiatry and neurology in the School of Medicine.

BRITISH INTERNATIONAL MEDICAL ADVISORY BUREAU.—The Council of the British Medical Association has established this

Bureau with a view to welcoming and providing a personal advisory service to physicians visiting the United Kingdom. Information is available at the Bureau on postgraduate education facilities and visits to hospitals and clinics. General information, advice as to lodging arrangements, etc., will also be available. Those wishing to visit hospitals or seeking advice about postgraduate courses should provide the Bureau with advance information as to professional experience. All communications should be sent to: The Medical Director, International Medical Advisory Bureau, Tavistock Square, London, W.C. 1, England.

THE AMERICAN COLLEGE OF NUTRITION.—Formation of the American College of Nutrition was announced on October 26 by a group of New York and New Jersey specialists in nutrition, metabolic diseases and gastroenterology. The college will include physicians, gerontologists, endocrinologists, surgeons and others. Its purpose is to promote postgraduate research and education in therapeutic nutrition.

The college is incorporated as a non-profit organization subject to American Medical Association regulations. Its annual meeting will precede the AMA convention in the same city each year, with the first meeting scheduled for Miami, Fla., in 1960. The administrative office of the college: 19 Oak St., Livingston, N. J. Dr. S. William Kalb of Newark, N. J. has been elected president, and Dr. Robert A. Peterman of Livingston, N. J., secretary-treasurer.

THE CHILIAN SOCIETY OF NEUROSURGERY.—The Third annual meeting of the Society will be held at Antofagasta, July 22-24, 1960. Subject: Neurological and Neurosurgical Sequelae of Birth Trauma.

President: Dr. Carlos Villavicencio.

Secretary-General: Dr. Juan Fierro M.

For information write to the Neurosurgical Society of Chile, Cassilla 70-D, Santiago.

COMMUNICATION AIDS IN APHASIA.—A one-hand manual language was developed by Dr. Hamilton Cameron of New York City as a result of his own disability from right hemiplegia and complete aphasia resulting from a cerebral embolism in 1943. Using his left hand he devised 20 hand signs which are pictured on a "Hand Talking Chart" that can be had without charge by doctors and nurses who may have use for it in their practices.

The International Research Council was chartered in 1954 as a world-wide medical organization for the collection and dissemination of knowledge concerning aphasia associated with hemiplegia.

Further information may be obtained from Dr. Cameron at 601 W. 110th St., New York 25, N. Y.

THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.—The Board will conduct its Spring, 1961, examinations in New Orleans, La., on March 20-21, 1961.

SEMINARS ON HYPNOSIS FOUNDATION.—A non-profit teaching and research institute has been incorporated and licensed by the State of Illinois. It is currently conducting courses in clinical hypnosis under the sponsorship of various medical and dental societies and universities, giving repeated courses of both beginning and advanced instruction to give full coverage over a two-year period.

President of the Board of Governors is Milton H. Erickson, M.D. Official headquarters : 6770 North Lincoln, Chicago 46, Ill. It is serviced by a teaching staff of more than 20 clinically experienced lecturers from the fields of medicine, dentistry and psychology.

INTERNATIONAL SYMPOSIUM, "THE EXTRA-PYRAMIDAL SYSTEM AND NEUROLEPTICS."—The Department of Psychiatry of the University of Montreal is organizing this international symposium to be held at the University of Montreal, November 17-19, 1960. The purpose is to permit an exchange of ideas among researchers interested in this subject from the point of view of anatomy, physiology, neurosurgery and psychiatry. Admission to the symposium will be

unrestricted but participation will be by invitation only. We have the cooperation of our 10 Canadian provinces, the United States and several European countries. The official languages are English and French, with simultaneous translation. For information, address to : Doctor Jean-Marc Bordeleau, Department of Psychiatry, University of Montreal, Montreal, Canada.

AMERICAN PSYCHOSOMATIC SOCIETY.—At the annual meeting of the American Psychosomatic Society in Montreal, March 25-27, 1960, the following persons took office : President, Morton F. Reiser, M.D. ; President-elect, Stewart Wolf, M.D. ; Secretary-Treasurer, Eugene Meyer, M.D.

Elected to Council positions were : John I. Lacey, Ph.D. ; John W. Mason, M.D. ; and John P. Spiegel, M.D.

The eighteenth annual meeting of the Society will be held on April 29 and 30, 1961, in Atlantic City.

SUMMER WORKSHOP AT VINELAND.—Sponsored jointly by Temple University and the 72-year-old Vineland Institution, the annual Summer Workshop for teachers and prospective teachers of retarded children will be held from June 27 to August 5, 1960.

The Training School at Vineland has a notable history in the field of education and training for the retarded. It was the first to establish a research centre in retardation ; it first standardized intelligence testing, and it developed early research in cerebral palsy and the Vineland Social Maturity Scale.

For information, contact The Director of Summer Sessions, Temple University, Philadelphia 22, Penna.

LYNCHBURG TRAINING SCHOOL LECTURES.—From May 26 to Oct. 26, 1960 The Lynchburg (Va.) Training School and Hospital will conduct a series of 16 lectures, seminars, and demonstrations in the fields of mental retardation, learning process, special education, neurological diseases of childhood, electroencephalography, schizophrenia, and psychotherapy.

Distinguished speakers will come from Letchworth Village, Medical College of

Virginia, Columbia University, Boston and University of Virginia.

GENERAL SEMANTICS GENERAL CONFERENCE.—The Conference will be held in Hawaii, July 31-Aug. 4, 1960. A package ticket at \$349.75 includes round trip by air, registration for the Conference, 7 days in Hawaii with 6 nights at the Hawaiian Village Hotel, special tours and meals.

Arrangements for attending the Conference should be made at once through Andrew W. Lerias, Inc., 133 Montgomery St., San Francisco.

EASTERN PSYCHIATRIC RESEARCH ASSOCIATION WORLD TOUR.—Members of the Association will start this tour July 1, 1960. They will hold meetings in conjunction with the psychiatric societies of Japan, Thailand, Hongkong, India and Israel. At these meetings members of the Association will present papers.

Anyone who would like to join the tour should contact Mr. C. J. Jones, University Travel Co., 18 Brattle St., Cambridge, Mass.

An all-inclusive round-trip fare will be approximately \$2,200. to \$2,300. per person.

THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.—The following candidates were certified by this Board after examination in San Francisco, Calif., March 14 and 15, 1960.

PSYCHIATRY

Ackerman, Norman Mactas, Woodmere, N. Y.
 Amselem, Benmaman Jaime, Agnew, Calif.
 Arlen, Harold W., Beverly Hills, Calif.
 Bail, Bernard W., Beverly Hills, Calif.
 Ball, Thomas Frederick, San Carlos, Calif.
 Belcher, Charles H., Winnebago, Wisc.
 Berenson, Marvin Harvey, Beverly Hills, Calif.
 Binstock, William A., Topeka, Kan.
 Blanchette, James E., Redlands, Calif.
 Boyce, William H., Philadelphia, Pa.
 Braun, Joseph A., Topeka, Kan.
 Braun, Robert A., Detroit, Mich.
 Breiner, Sander James, Detroit, Mich.
 Briggs, Leon Royden, Jr., Fresno, Calif.
 Brown, George Clark, Oakland, Calif.
 Cambor, Charles Glenn, Mayview, Pa.
 Cheatham, James S., Seattle, Wash.
 Chen, Calvin H., Northville, Mich.
 Cooper, Arnold M., New York, N. Y.
 Errichetti, Anthony Joseph, Jr., San Francisco, Calif.
 Eshleman, S. Kendrick, III, Lancaster, Pa.

Fischer, Ames, San Mateo, Calif.
 Follette, William T., San Francisco, Calif.
 Freeman, Paul, San Francisco, Calif.
 Furukawa, Edward F., Philadelphia, Pa.
 Gerz, Hans Otto, Middletown, Conn.
 Graham, Charles R., Berkeley, Calif.
 Granzow, O. Joachim, Los Angeles, Calif.
 Griffin, Julius, Encino, Calif.
 Grotstein, James Stanleigh, Beverly Hills, Calif.
 Guido, John A., Fullerton, Calif.
 Haberle, Charles A., Minneapolis, Minn.
 Haentzschel, Lester E., Salem, Ore.
 Haylett, Clarice H., San Francisco, Calif.
 Hermann, Harland T., Fort Meade, S. D.
 Hernandez, Manuel O., Worcester, Mass.
 Hoyer, Thomas V., Van Nuys, Calif.
 Ionedes, Nicholas, Hines, Ill.
 Johnston, Harold B., Tacoma, Wash.
 Kane, Ruth Powell, Pittsburgh, Pa.
 Karn, William Nicholas, Jr., Evanston, Wyo.
 Kaupas, Julius V., Eloise, Mich.
 Kenward, John F., Chicago, Ill.
 Kinsman, Robert G., Fullerton, Calif.
 Kline, Frank M., Beverly Hills, Calif.
 Knight, James A., Houston, Tex.
 Koegler, Ronald R., Los Angeles, Calif.
 Kramer, Charles H., Oak Park, Ill.
 Langsley, Donald G., San Francisco, Calif.
 Lanning, Theodore R., Brooklyn, N. Y.
 Larson, Alfred Leonard, San Rafael, Calif.
 Lebovitz, Allen E., Pittsburgh, Pa.
 Leone, William A., Miami, Fla.
 Lightburn, John L., Denver, Col.
 Linton, Patrick H., Topeka, Kan.
 Marshall, John D., Jr., Westport, Conn.
 Marty, Samuel C., Jr., San Mateo, Calif.
 Mason, Edward, Worcester, Mass.
 Mawardi, Youssef K., Los Angeles, Calif.
 Mayberg, Donald MacMillan, Minneapolis, Minn.
 Mercer, Wayne C., San Francisco, Calif.
 Merjanian, Antipas, Agnew, Calif.
 Morgenstern, H. S., Napa, Calif.
 Neal, Miron W., Belvedere, Calif.
 Nobel, Rudolf E., Lansing, Mich.
 Orgun, Ibrahim Necmi, Hartford, Conn.
 Osinoff, Maurice, New York, N. Y.
 Paredes, Alfonso, Oklahoma City, Okla.
 Parlour, Richard R., Beverly Hills, Calif.
 Patterson, Robert M., Imola, Calif.
 Pipe, Bernard Joseph, Tacoma, Wash.
 Powell, Charles W., Cherokee, Iowa
 Raulinaitis, Valerija B., Downey, Ill.
 Rondeau, Henry Thomas, Arcadia, Calif.
 Ross, Melvin B., Cleveland 6, Ohio
 Schapire, Hans Martin, Denver, Col.
 Shipper, John C., Los Angeles, Calif.
 Sidley, Nathan T., West Newton, Mass.
 Simmons, James Q., III, San Fernando, Calif.
 Simson, Clyde B., Detroit, Mich.
 Smith, Philip B., Topeka, Kan.
 Spira, Henry, Birmingham, Ala.
 Stamatovich, Constantine, Flushing, N. Y.
 Tapia, Fernando, Clayton, Mo.
 Traill, Alexander C., Denver, Col.
 Turcotte, Guy N., Portland, Maine

Turner, David Allen, New York, N. Y.
 Vaughn, Francis M., Boston, Mass.
 Vossler, George Edward, Columbus, Ohio
 Washburn, Stephen Louis, Belmont, Mass.
 Wasserman, Edward, Chicago, Ill.
 Weckstein, Marvin S., Detroit, Mich.
 Weiss, Carl D., Berkeley, Calif.
 Wenz, William John, Detroit, Mich.
 Wenzel, William Douglas, Baltimore, Md.
 Winkler, Ralph K., Stockton, Calif.
 Zensky, Boris, Tucson, Ariz.

•Denotes Supplementary Certification

NEUROLOGY

Ajax, Ernest Theodore, Salt Lake City, Utah
 Davis, Edward H., New York, N. Y.
 Horner, Frederick A., Denver, Col.
 Mauceri, Jennie, Woodside, N. Y.
 Reinert, John E., Rapid City, S. D.
 Thompson, Hartwell G., Jr., Madison, Wisc.
 Tourtellotte, Wallace William, Ann Arbor, Mich.
 •Walter, Richard D., Los Angeles, Calif.
 Watson, James MacDonald, Syracuse, N. Y.
 Webster, David D., Minneapolis, Minn.
 Wells, Charles Edmon, New York, N. Y.

TIME AND ETERNITY

The now that flows away makes time, the now that stands still makes eternity.

—BOETHIUS (480?-524)

MESOPOTAMIAN MEDICINE

A system of medicine that was dominated by magic and religion, and the purpose of which was to rehabilitate an individual and to reconcile him with the transcendental world, obviously included psychotherapy, the soul-searching of a patient who was convinced that he suffered because he had sinned had a liberating effect; and the rites performed and the words spoken by the incantation priest had a profound suggestive power. Mesopotamian medicine was psychosomatic in all its aspects.

—HENRY E. SIGERIST
A History of Medicine

BOOK REVIEWS

J. M. CHARCOT, HIS LIFE—HIS WORK. By Georges Guillain, M.D. Edited and translated by Pearce Bailey, Ph.D., M.D. (New York: Paul B. Hoeber, Inc., Harper and Brothers. pp. xvi + 202 incl. index. illus., 1959. \$7.00.)

Charcot was one of those men who, in the words of Pearce Bailey, "cross the narrow boundaries between nations and belong to the whole world." He died in 1893. In 1955 was published the original biography in French by Professor Georges Guillain, who, too young to have been a pupil of Charcot, was however a pupil of several of the closest disciples of the Master, including Raymond, his successor, and Pierre Marie. Eventually Guillain occupied the same professorial chair at the Faculty of Medicine in Paris that had been created for Charcot.

The story of Charcot is intimately bound up with that of the great hospital of the Salpêtrière, "that grand asylum of human misery" as he called it, and which dates from the 16th century. The name derives from an arsenal where gunpowder was stored and which originally occupied the same site. Conversion to asylum and hospital uses with much new construction took place during the 17th century. The history of this famous institution is included in Guillain's text.

Charcot was born in Paris in 1825. He died at the age of 68. He had begun his studies in neurology in 1850; he came to the Salpêtrière in 1862, was appointed clinical professor of diseases of the nervous system in 1881, thus becoming the world's first professor of clinical neurology. In Bailey's words he "transformed the Salpêtrière from a prison and an asylum of unwanted womanhood into one of the great clinical research centers in the world."

Guillain in his dramatic story calls Charcot "the veritable creator of modern neurology." And he documents this statement with a list of some of the discoveries reported year by year from the Salpêtrière clinic; among them, intermittent claudication (1858); he was the first in France to describe exophthalmic goitre (1856); amyotrophic lateral sclerosis (1865), sometimes spoken of as "Charcot's disease"; amyotrophy Charcot-Marie, also described by H. H. Tooth of London the same year (1886); multiple sclerosis, named by Charcot "*sclérose en plaques*," and differentiated from paralytic agitations (1868); tabetic arthropathies (1868);

spastic spinal paralysis, called by Charcot "*tabes dorsalis spasmodique*" (1876). Erb had also observed this syndrome in 1875; cerebral localization studies (1870-1880); spinal cord localization (1873); hysteria and the neuroses (1862-1892).

Guillain has something to say about later criticisms of Charcot's description of hysteria "by some of the younger generations who have never read the works of Charcot." These remarks are timely because of the perennial tendency of certain writers of any period to misunderstand and even misrepresent the teachings of their predecessors with whose works they are not familiar.

Pierre Marie pointed out that originally in the service assigned to Charcot at the Salpêtrière epileptics and hysterical patients were indiscriminately housed. "Living in this way among the epileptics," wrote Marie, "the young hysterics were susceptible to powerful impressions and because of their tendency to mimic . . . they duplicated in their hysterical fits every phase of a genuine epileptic seizure." Guillain agrees that Charcot's account of the "major hysteric crisis with its four well-defined phases was unquestionably quite artificial and colored by acting on the part of some patients"; but he also lists the multiform symptoms recognized as characteristic of the hysteric neurosis and of which Charcot gave full descriptions. To the charge that he overlooked the problem of malingering his own words give the refutation: "It is found in every phase of hysteria and one is surprised at times to admire the ruse, the sagacity, and the unyielding tenacity that especially the women, who are under the influence of a severe neurosis, display in order to deceive . . . especially when the victim of the deceit happens to be a physician." Charcot also gave a full account of the condition later elaborated by Duprè as "mythomania."

Supplemental to the chapter on Charcot's hysteria studies Guillain adds a discussion of Babinski's theories.

Professor Leyden of Berlin spoke of the Salpêtrière of Charcot as "the center of the grand international march of neuropathology, where everything was to be seen and to be learned, and where almost every day something new was brought to light."

And Babinski in 1925: "To take from neurology all the discoveries made by Charcot would be to render it unrecognizable. Indeed, not a single day passes in a neurologic service

that we do not use some of the notions he introduced; his thinking is always with us."

After his death, Charcot's pupils collected funds for making and erecting at the entrance of the Salpêtrière a bronze statue of their beloved Master. In 1942 Nazi troops occupying Paris caused this statue to be melted into scrap metal. Recording this bit of recent history Guillaumin said: "Here, I should like to abstain from comment."

Pearce Bailey has rendered an important service in making Guillaumin's book available to English readers. He has done much more than translating the French text; he has added footnotes throughout explaining difficult French expressions and allusions to personalities and incidents that require familiarity with the French scene and French history. His version thus becomes easy and delightful reading.

A number of illustrations, including one of the bronze statue that is no more, accompany the text.

C.B.F.

PSYCHOTROPIC DRUGS. By S. Garattini and V. Ghetti.

This book, edited in Milan, Italy, contains the proceedings of the International Symposium on Psychotropic Drugs which was held in Milan in May 1957. This is the first major international symposium on psychopharmacological agents to appear since the advent of chlorpromazine and reserpine in the early 1950's. This volume of 606 pages contains 100 papers and short communications on a wide variety of drugs by authors from many countries. Both academic research reports and papers emanating from the laboratories of pharmaceutical companies are included. Three-fourths of the volume is devoted to basic research on brain function and on the behavioral electrophysiological and general pharmacological studies of psychotropic drugs. The basic work reported includes interesting papers by Miller, Killam, Olds, Bradley, Unna, Himwich, Norton, Blough, Morrucci, Blaschko, and Garattini, to name just a few. The book is particularly valuable for those interested in the mechanisms by which drugs act on the central nervous system, the clinical work reported being, generally, more informal and giving more limited coverage of this aspect of psychopharmacology. Many of the contributions from France, Italy, and other European countries are printed in the language of the author. English summaries are provided for the

major papers but not for the brief communications also included in this volume.

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WATER AND ELECTROLYTE METABOLISM IN RELATION TO AGE AND SEX. Ciba Foundation Colloquia on Ageing, Vol. 4. Edited by G. E. W. Wolstenholme and M. O'Connor. (Boston: Little, Brown and Co., 1958, pp. 327. \$8.50.)

This is the collection of papers and discussions about them presented at a colloquia held in January, 1958, in London under the auspices of the Ciba Foundation. The participants were 27 authorities in the field of water and electrolyte metabolism, from Europe and the United States.

Though many topics are covered, there is but little dealing specifically with the central nervous system and hence of direct interest to the neurologist or psychiatrist. The paper of Fourman and Leeson on hyponatremia and hypernatremia associated with cerebral disturbances was a critical review of this topic and the presentation of some case data; their conclusions are that problems of hypernatremia are in general ones of water deficiency while those of hyponatremia are more complicated and can be associated with either simple salt depletion and/or excess dilution of extracellular fluid by water. Because of the recent interest in a magnesium deficiency syndrome, the paper of Card and Marks is also of some interest to neurologists and psychiatrists; these workers emphasize the great difficulty there is in producing a sufficient depletion of body magnesium to cause clinical signs.

This book is not meant to be either a textbook nor a general review of the field; the general tenor of the material presented and the discussions that follow the various papers is on the level of the expert in the field. The book will no doubt be of interest to those who already have a good background in this complicated field.

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CHILDBEARING BEFORE AND AFTER THIRTY-FIVE. By Adrien Bleyer. (New York: Vantage Press, 1958, pp. 119, \$2.95.)

This unobtrusively published book is of great importance. It is by a remarkable physician who was for many years associate professor of clinical pediatrics at the Washington Uni-

versity School of Medicine. In 1906 he founded the first Infant Welfare Clinic in America. For many years he has been our *best* authority on mongolism, and in 1934, in an astonishingly brilliant piece of informed deduction, he correctly suggested the cause of mongolism in a paper entitled "Indications that Mongoloid Imbecility is a Gametic Mutation of Degressive Type," *Am. J. Dis. Child.*, 47 : 342-348, 1934. The explanation offered in this astonishing paper, as far as I know, was completely ignored, and it was not until January 1959 with the publication of Lejeune and his co-workers' paper, and in later months in 1959, that mongolism was demonstrated to be due to a disjunctive chromosomal aberration. The present volume was published too early to incorporate these new discoveries, and it was a reference to his 1934 paper on mongolism that led me to the discovery for myself of Dr. Bleyer's truly remarkable paper—which I should rank as one of the outstanding pieces of ratiocination in the whole history of science. It is really quite astonishing that it had to wait a quarter of a century for confirmation by workers who, I am sure, had never heard of Dr. Bleyer's paper.

In the present volume Dr. Bleyer resumes some of the evidence which demonstrates that the optimum age for childbearing is between about 21 and 28 years, and that as the mother's age advances every aspect of pregnancy, from the development of the embryo to labor and birth, is increasingly seriously affected.

Since the reviewer has been collecting material on this subject for many years, he can confirm the general validity of this demonstration. Readers of this Journal will be interested in the evidence bearing on the relation between age of parents, and particularly of mother at conception of the patient. There is no longer any doubt that in a significant proportion of cases there is not only a social but also a biological factor, in some way related to age of mother at conception of the patient, which plays some role in affecting the psychological development of the individual.

The social and biological implications of maternity after age 35 are of the most serious nature, and society, already much indebted to Dr. Bleyer, and the physician and social worker, will be grateful to the author for bringing together so much of the relevant evidence relating to an area of social and medical practice which is still virtually wholly ignored. Dr. Bleyer's book is short, readable, and convincing, so that even he that runs may

read. Its size is in inverse proportion to its importance.

ASHLEY MONTAGU, Ph.D.,
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DIAGNOSTICA PSICHIATRICA. Parte Speciale.
By Agostino Rubino Idelson. (Naples)
Di E. Gnocchi E F., 1958. pp. 443.
L.5.500.)

This is the second of a series of 3 volumes written by Rubino on psychiatric diagnosis. It is difficult to review a book devoted to this subject at a time when psychiatric diagnosis has lost importance in relation to the psychodynamic and therapeutic approaches. The various entities are here described as collections of symptoms, without any attempt being made to interpret or to connect them together. Perhaps the author will do so in the third volume.

Rubino is a pupil of Buscaino, who is one of the staunchest supporters in Europe of the organic school of psychiatry, believing that most psychiatric disorders are the results of metabolic dysfunctions. The whole book is written in the spirit of Kraepelin's and Buscaino's teachings. Bleuler has left very little imprint on the author, and such contributors as Adolf Meyer, Freud, Jung, Sullivan, Vigostki, Goldstein and others are almost completely ignored.

The book cannot be recommended as a complete textbook of psychiatry. However, certain sections, which are generally neglected in American psychiatric books, namely those dealing with rare organic syndromes like some types of mental deficiencies, will be read with profit in this book by readers who are particularly interested in these conditions.

The book is richly illustrated.

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THE EVOLUTION OF MAN'S CAPACITY FOR CULTURE. Edited by J. N. Spuhler. (Detroit : Wayne State University Press, 1959, pp. 79. \$3.50.)

This is a most stimulating book containing 7 contributions to the fascinating problem how man evolved his capacity for culture. Dr. J. N. Spuhler considers "Somatic Paths to Culture" in a brilliant article, Ralph W. Gerard discusses "Brains and Behavior," S. L. Washburn speculates "... on the Interrelations of the History of Tools and Biological Evolution," Charles F. Hockett, makes a most original contribution in discussing the criteria of "Ani-

mal Languages and Human Language." Harry P. Harlow, has some interesting views on "Basic Social Capacity of Primates" and in a paper of quite fundamental importance Marshall D. Sahlins discusses "The Social Life of Monkeys, Apes and Primitive Man." In a final "Summary Review" Leslie A. White ably discusses the issues.

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CURRENT CONCEPTS OF POSITIVE MENTAL HEALTH. By Marie Jahoda, Ph.D. (New York: Basic Books, Inc., 1958, pp. 136. \$2.75.)

Considerable interest will attend the reports of the Joint Commission on Mental Illness and Health. This Commission was established by the Mental Health Study Act of Congress in 1955. Eleven reports are expected during the next few months, of which this present monograph is the first.

In it, Dr. Jahoda reviews many of the more important attempts which psychiatric and social scientists have made to arrive at a satisfactory definition of good mental health. The theoretical assumptions and the evidence pro and con are briefly but clearly described. In approaching this very difficult task the author seeks the answer to such questions as: What is the essence, the core characteristic of positive mental health? How does it manifest itself? How can it be appraised and measured? What influences it for better or worse and how can it be protected or enhanced? As might be expected, the amount of theoretical material available is tremendous but the nature and extent of supporting scientific evidence is small.

Inevitably, value judgments must be made. We have to decide that one quality (or behaviour characteristic) is desirable, while another is not. And the decision, obviously, can only be made in a context of moral and ethical preferences, in addition to cultural and social considerations. The author concludes, a little sadly, that her review "does not resolve the complex problem of clarifying the psychological meaning of Positive Mental Health." Cer-

tainly the evidence indicates that there is no one kind of good mental health, any more than there is one kind of mental illness. Similarly the environmental and biologic conditions making for good mental health are difficult to isolate and study. "Those dissatisfied with this unending search for better and better approximations to an unattainable goal will have to turn away from science and seek elsewhere for their insight into conditions for mental health."

In spite of these discouraging conclusions Dr. Jahoda has done an extremely competent job of evaluating critically the current thinking in this area. She establishes 6 basic concepts relating to good Mental Health for which there is considerable support among scientific workers. These are: 1. Attitudes toward the self; 2. Growth Development and Self Actualization; 3. Integration; 4. Autonomy; 5. Perception of Reality; and 6. Environmental Mastery. The empirical basis for her selection, the conditions required for their observation and the specific nature and design of further research necessary are indicated.

The author's base line in this monograph is the premise that positive or "good" mental health is essentially different from the mere absence of mental illness and that no dichotomy exists separating on a continuum the one from the other. In this assumption she is in good company, for it is one entirely consistent with the definition of health contained in the charter of the World Health Organization. And this has been officially subscribed to by some 70 different countries!

However, it is not subscribed to by all psychiatrists, as is attested by Dr. Walter Barton in the concluding chapter (The Viewpoint of a Clinician). Many physicians will feel more at home with his contention that concepts involving psychobiologic and physiologic equilibrium (e.g., Cannon's Homeostasis) are useful and that perhaps after all from a practical point of view, when a patient recovers from his mental illness and loses his mental symptoms he returns to a state of "good" mental health.

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Catron

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WARNING: Although pharmacologic evidence indicates that CATRON has a relatively low toxicity, it as well as other monoamine oxidase inhibitors may cause hepatitis. Because of the possibility of this life-threatening hepatitis, and of other effects discussed above, the following recommendations and precautions should be observed. If necessary, the patient should be hospitalized to expedite adherence to this regimen.

The Following Precautions Are Recommended

1. Do not use the drug in patients with a history of viral hepatitis or other liver abnormalities.
2. Perform regular liver function tests.
3. In all instances daily dose should not exceed 12 mg.
4. Reduce daily dose as soon as response is established, usually in a matter of 1 to 2 weeks.
5. Do not prescribe to a patient more than sixteen 6 mg. tablets or thirty-two 3 mg. tablets of CATRON at one time.
6. Patient should return for observation before additional CATRON is prescribed. For this reason, prescriptions for CATRON should be marked, "Not refillable."

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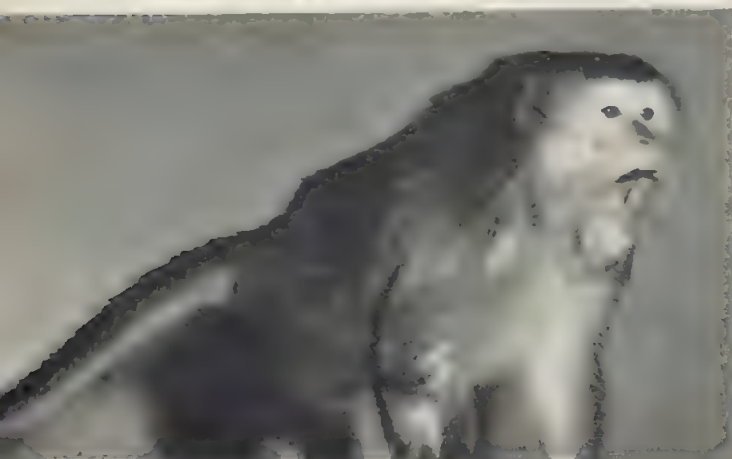
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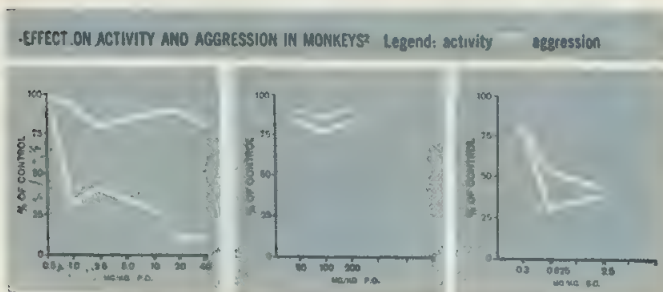
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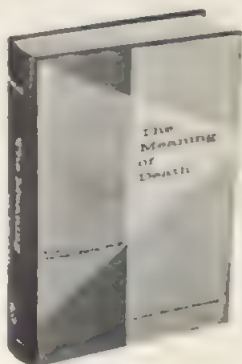
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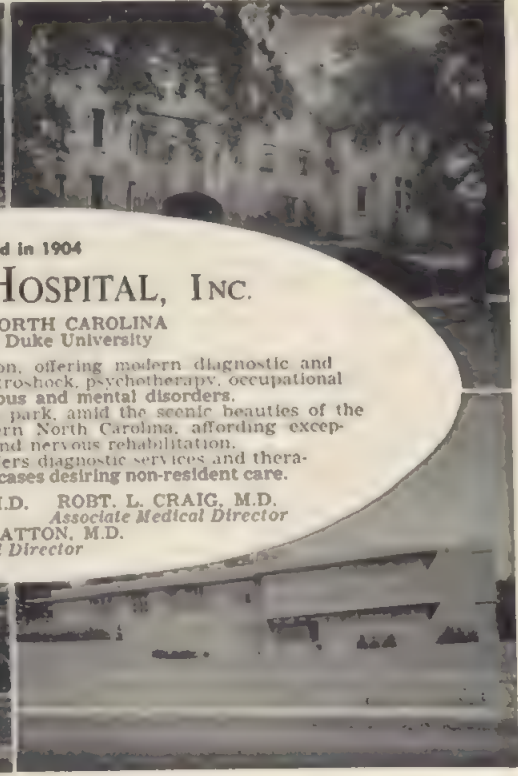
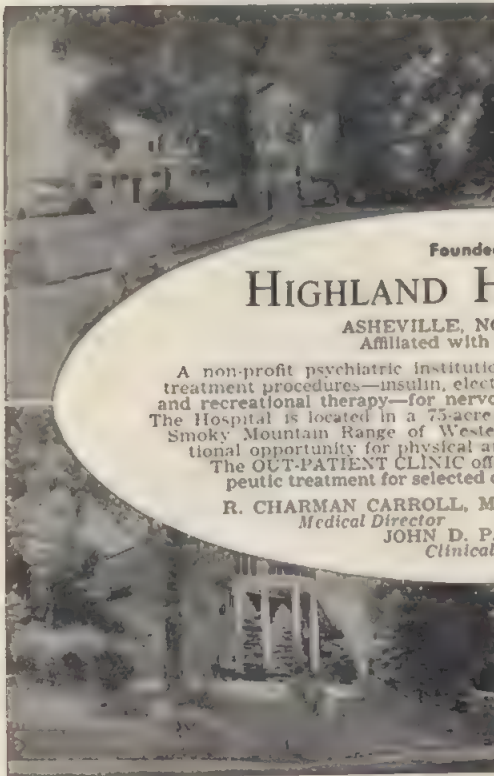
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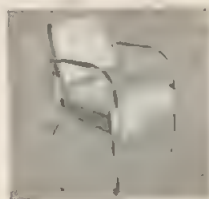
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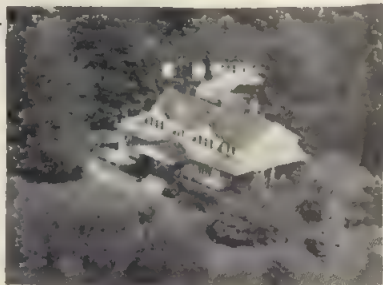
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